EOSDIS Core System Project

ECS Science Acceptance Test Plan for Release 6A

March 2000

Raytheon Systems Company
Upper Marlboro, Maryland

ECS Overall Acceptance Test Plan for Release 6A

March 2000

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Preface

This document is a formal contract deliverable with an approval code 1. It requires Government review and approval prior to acceptance and use. This document is under ECS contractor configuration control. Once this document is approved, Contractor approved changes are handled in accordance with Class I and Class II change control requirements described in the EOS Configuration Management Plan, and changes to this document shall be made by document change notice (DCN) or by complete revision.

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Abstract

The Release 6A ECS System Acceptance Test Plan (ATP) describes the approach that the System Verification and Acceptance Testing (SVAT) Organization takes to verify applicable ECS Release 6A Acceptance Criteria. The Release 6A ECS System Acceptance Test Plan contains the overall acceptance test plan, processes, test cases and schedules that will be used to verify Release 6A functionality. The ATP specifies the method used to accomplish the Acceptance Testing of Release 6A. It defines the plan that will be used to formally verify that Release 6A meets the specified operational, functional, and interface requirements.

Keywords: AM-1, Landsat 7, scenario, sequence, test case, acceptance, management, plan, verification, Release 6A, ATP, AT, SVAT.

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1. Introduction

1.1 Identification

This Acceptance Test Plan (ATP), Contract Data Requirement List (CDRL) item 069, whose requirements are specified in Data Item Description (DID) 409/VE1, is a required deliverable under the Earth Observing System Data and Information System (EOSDIS) Core System (ECS) Contract NAS5-60000. The Release 6A ECS Science Acceptance Test Plan describes the approach System Verification and Acceptance Testing (SVAT) will take to verify applicable 6A Acceptance Criteria. The Release 6A ECS System Acceptance Test Plan contains the overall acceptance test plan, processes, test cases and schedules used to verify Release 6A.

1.2 Scope

The Release 6A system provides additional capabilities above those provided in the Release 5B system. New major capabilities provided by Release 6A are delineated in paragraph 3.1.2. In addition to the new capabilities introduced in Release 6A, the system will include modifications to address certain NCRs that have been written during prior releases against the ECS system.

1.3 Purpose

The purpose of this Release 6A ECS System Acceptance Test Plan is to provide an overview of the overall acceptance test philosophy, process and schedule used to formally verify that the ECS Release 6A satisfies all criteria based on requirements as delineated in the 6A Science System Release Plan for the ECS Project, 334-CD-600-002.

1.4 Status and Schedule

The submittal of DID 409/VE1 meets the milestone specified in the Contract Data Requirements List (CDRL) for ECS Overall System Acceptance Test Plan of NASA contract NAS5-60000. The submittal schedule is in accordance with the 6A Science System Release Plan, and the Master Program Schedule, as shown in Appendix B, the Primavera Schedule Listing.

1.5 Organization

The Release 6A ECS System Acceptance Test Plan is organized in five sections and two appendices. Sections 1-5 address the approach the SVAT takes to test the Release 6A ECS system. These sections apply to testing at all locations and include the following detail:

- Section 1. Introduction -- Provides information regarding the identification, scope, purpose, status and schedule, and organization of this document.

- Section 2. Related Documentation -- Provides a listing of parent documents, applicable documents, and documents which are used as source information.

- Section 3. Acceptance Test Overview -- Describes Release 6A capabilities and provides an overview of the acceptance tests.

- Section 4. Test Tools -- Describes the test tools used by SVAT to conduct ECS Release 6A System Acceptance Tests.

- Section 5. Test Preparation and Coordination -- Discusses the process by which formal acceptance testing is managed and executed.

- Appendix A; Acceptance Test Summaries – Provides a mapping of the Release 6A Test Cases to their associated Acceptance Criteria.

- Appendix B; Primavera Schedule Listing – Provides a print out of the Release 6A Acceptance Test schedule current at the date of print of this document.

2. Related Documentation

2.1 Parent Documents

The parent documents are the documents from which the scope and content of this document are derived.

334-CD-600	6A Science System Release Plan for the ECS Project
194-401-VE1	Verification Plan for the ECS Project, Final
420-05-03	Earth Observing System (EOS) Performance Assurance Requirements for EOSDIS Core System (ECS)
423-41-01	Goddard Space Flight Center, EOSDIS Core System (ECS) Statement of Work
423-41-02	Goddard Space Flight Center, Functional and Performance Requirements Specification for the Earth Observing System Data and Information System (EOSDIS) Core System (ECS)
423-41-03	Goddard Space Flight Center, EOSDIS Core System Contract Data Requirements Document

2.2 Applicable Documents

The following documents are referenced within this Test Procedures document, or are directly applicable, or contain policies or other directive matters that are binding upon the content of this document.

313-CD-610	Release 6A ECS Internal Interface Control Document for the ECS Project, Draft
607-CD-001	Maintenance and Operations Position Description for the ECS Project
211-TP-005	Transition Plan 4PX to 4PY, 4PY to 5A, and 5A to 5B for the ECS Project
http://ecsv.gsfc.nasa.gov/ecsv_v2/rports/db_tickets/index.cgi	5B and 6A Tickets
http://ecsv.gsfc.nasa.gov/ecsv.index.hyml	ECS Verification Database (VDB 1)
http://ecsv.gsfc.nasa.gov/ecsv_v2/index.html	ECS Verification Database (VDB 2)
http://dmserver.gsfc.nasa.gov/relb_it/6a.html	Release 6A Acceptance Test Procedures
http://dmserver.gsfc.nasa.gov/ecstest/	ECS Test Data Home Page
CM-1-016-1	"Software Development Using ClearCase" ECS Work Instruction

SD-1-030	"Software Turnover Process" ECS Project Instruction
TT-1-001	"Test Preparation, Execution, and Documentation" ECS Project Instruction
TT-1-001-2	"Test Execution Activities" ECS Work Instruction
TT-1-001-3	"Criteria Verification and Test Status Log" ECS Work Instruction
TT-1-003-1	"Test Folders" ECS Work Instruction
505-41-11	Goddard Space Flight Center, Interface Requirements Document Between Earth Observing System Data and Information System (EOSDIS) and Version 0 System
505-41-12	Goddard Space Flight Center, Interface Requirements Document Between EOSDIS Core System (ECS) and Science Computing Facilities
505-41-13	Goddard Space Flight Center, Interface Requirements Document Between the Earth Observing System Data and Information System (EOSDIS) and the Landsat 7 System
505-41-18	Goddard Space Flight Center, Interface Requirements Document Between Earth Observing System Data and Information System (EOSDIS) and MITI ASTER GDS Project
505-41-19	Goddard Space Flight Center, Interface Requirements Document Between the EOSDIS Core System (ECS) and the National Oceanic and Atmospheric Administration (NOAA) Affiliated Data Center (ADC)
505-41-21	Goddard Space Flight Center, Interface Requirements Document Between EOSDIS Core System (ECS) and NASA Institutional Support Systems (NISS)
505-41-22	Goddard Space Flight Center, Interface Requirements Document Between the EOSDIS Core System (ECS) and the Stratospheric Aerosol and Gas Experiment (SAGE III)
505-41-30	Goddard Space Flight Center, Interface Control Document Between the EOSDIS Core System (ECS) and the V0 System for Interoperability
505-41-31	Goddard Space Flight Center, Interface Control Document Between the EOSDIS Core System (ECS) and NSI
505-41-32	Goddard Space Flight Center, Interface Control Document Between Earth Observing System Data and Information System, and the Landsat 7 System
505-41-33	Goddard Space Flight Center, Interface Control Document Between the EOSDIS Core System (ECS) and Science Computing Facilities (SCF)

505-41-34	External Interface Control Document Between EOSDIS Core System (ECS) and ASTER Ground Data System
505-41-36	Goddard Space Flight Center, Interface Control Document Between the EOSDIS Core System (ECS) and the National Oceanic and Atmospheric Administration (NOAA) ADC for the ECS Project
505-41-39	Goddard Space Flight Center, Interface Control Document Between the EOSDIS Core System (ECS) and the Langley Research Center (LaRC) Distributed Active Archive Center (DAAC) for the ECS Project
505-41-40	Goddard Space Flight Center, Interface Control Document Between the EOSDIS Core System (ECS) the Goddard Space Flight Center (GSFC) Distributed Active Archive Center (DAAC) for the ECS Project
505-41-47	Goddard Space Flight Center, Interface Control Document Between the EOSDIS Core System (ECS) and the Stratospheric Aerosol and Gas Experiment (SAGE III) Mission Operations Center (MOC)
510-ICD-EDOS/EGS	Earth Observing System (EOS) Data and Operations System (EDOS) Interface Control Document Between the Earth Observing System (EOS) Data and Operations System (EDOS) and the EOS Ground System (EGS) Elements
552-FDD-96/010R0UD0	Goddard Space Flight Center, Earth Observing System (EOS AM-1 Flight Dynamics Division (FDD)/EOSDIS Core System (ECS) Interface Control Document
560-EDOS-0211.0001	Goddard Space Flight Center, EDOS Interface Requirements Document (IRD) Between the Earth Observing System (EOS) Data and Operations System (EDOS), and the EOS Ground System (EGS) Elements
DAO IRD/ICD	(tbd)
DID515	Availability Models Predictions
DID516	Reliability Predictions
DID518	Maintainability Predictions

2.3 Information Documents

The following documents, although not referenced herein and/or not directly applicable, amplify or clarify the information presented in this document, but are not binding on the content of this ECS System Acceptance Test Plan document.

420-TP-019	The Transition Approach to the ECS Drop 5A System, Technical Paper

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3. Acceptance Test Overview

3.1 Acceptance Test Overview

3.1.1 System Verification Approach

To verify that the ECS system satisfactorily supports the functions specified by the 6A Level 3 and Level 4 requirements, ECS has incorporated a verification database schema to capture related requirement sets in "Tickets" similar to those generated in Release 5A and 5B. A 'Ticket' represents each set of Level 3's, Level 4's, and IRDs that comprise the release capability features for that set of requirements. The ECS Architect Office generates verification acceptance criteria related to the requirements and incorporates them in each Ticket. The test organization identifies Test Cases to verify these acceptance criteria, which in turn, are linked in the Verification Database (VDB). The test verification database schema is depicted in Figure 3.1.1.

The Test Team works with the Development Organization during Development integration period to become familiar with each subsystem and informally witness and assist the integration tests as they are developed and performed. These integration tests have become a vital input and building block for the Test Team in generating their acceptance tests. Once defined, the acceptance test cases are scheduled in Primavera. The Test Procedures are then developed by the Test Team. Following an iteration of reviews by the AO and ESDIS with updates by the Test Team, the procedures are approved by ESDIS and posted on the WEB. Acceptance tests are dry run and then formally executed in the Verification and Acceptance Test Center (VATC) or applicable DAACs if necessary. The test results are reported in the VDB, presented at the CSR, and recorded in the Acceptance Test Report (DID 412).

Release Capabilities

TICKETS

TICKETS/
Features

Features

TICKETS/
IRDs

TICKETS/
Level 3's

TICKETS/
Level 4's

TICKETS/
Criteria

TICKETS/
Test Cases

IRDs

IRDs/
Level 3's

Level 3's

Level 3's/
Level 4's

Level 4's

Criteria

Criteria/
Test Cases

Test Cases

IRDs/
Level 4's

Level 4's/
Dev. Capabilities

Level 4's/
Integration Tests

Test Case to
Criteria Status

Test Case
Status

**Development
Capabilities**

**Developer's
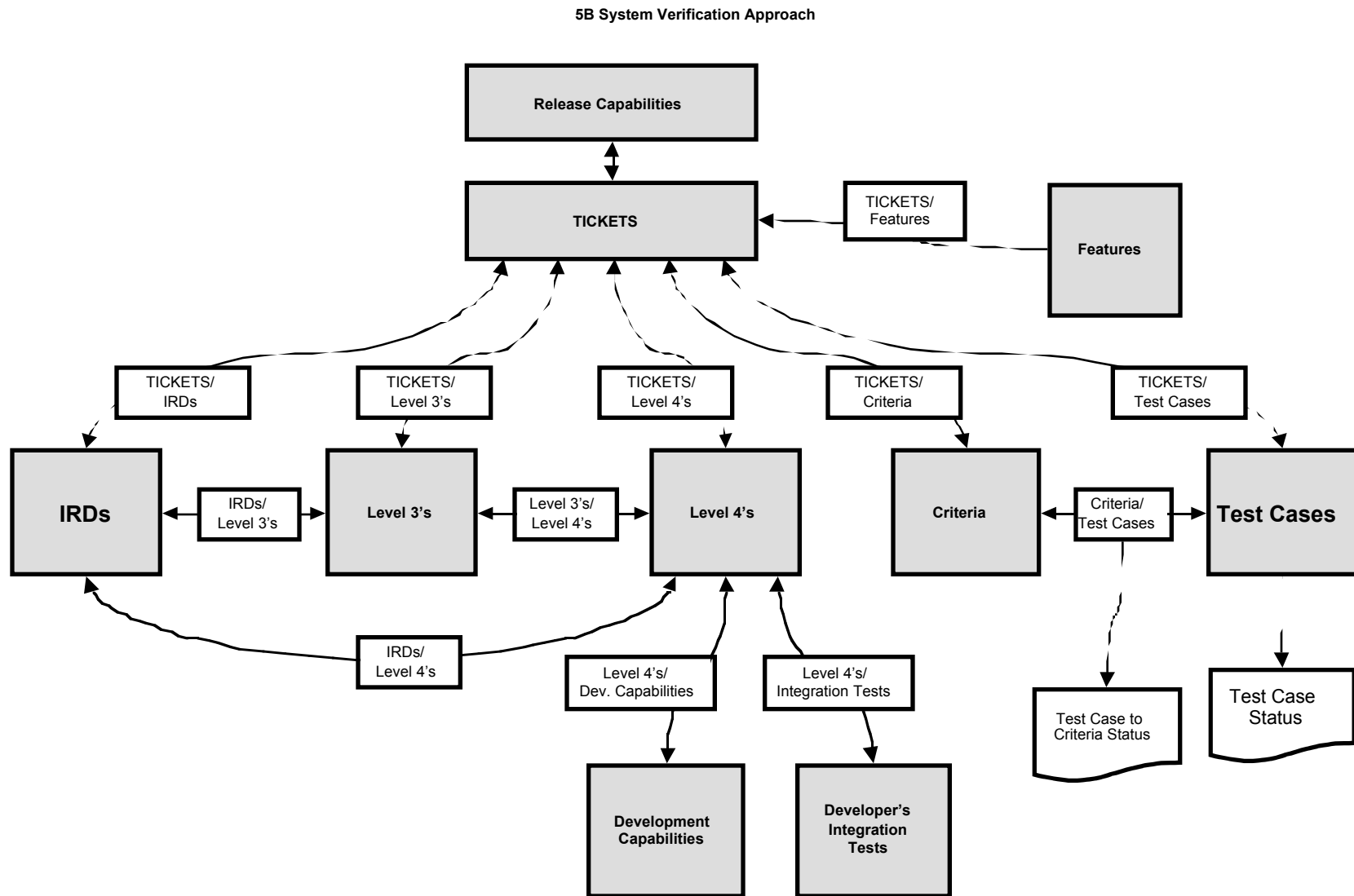Integration
Tests**

Figure 3.1-1.   5B System Verification Database Schema

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3.1.2 Release Capability Priorities

Release 6A is being developed based on a set of Release Capabilities (RC's). These RC's are defined in support of operational readiness for new missions and enhancement of existing capabilities in use by operations. The following provide RC's and their summary description for 6A:

1. **Reprocessing**. Release 6A will support the regeneration of products that were previously produced and archived. The upgraded products will be archived in addition to the versions that were previously archived. The reprocessing load for 6A will be one times that of standard production.

2. **System Throughput**. Changes will be made in Release 6A to support the increasing requirements of Terra instruments and the new requirements for Aqua instruments with regard to ingest, production, storage, and distribution.

3. **Additional Media Types**. Support for writing files to CD-ROMs and DLT tape drives for distribution will be added for Release 6A.

4. **Compression for Distribution**. Two types of compression, Unix and Gzip, will be supported for the distribution of data.

5. **V0 Gateway Enhancements**. ECS will provide access to collections that are not considered to be science data collections. These requests would come through the V0 Gateway from the V0 Web Gateway. This includes the capability to limit the number of attributes and their values associated with granules that are sent from the V0 to ECS Gateway back to the V0 Web Client as part of an INVENTORY_RESULT message.

6. **FTP Pull Subscriptions**. Release 6A will support subscription acquires via FTP pull.

7. **Machine-to-Machine Gateway**. ECS will provide a SIPS/ECS gateway. The gateway will accept data orders from a SIPS via TCP/IP sockets in ASCII, specifying the data type, spatial and/or temporal qualification, and other qualifications. The gateway will submit the corresponding search request into ECS, and order the resulting granules for ftp-push or media from ECS.

8. **Granule Deletion**. Release 6A will provide a mechanism for operators to delete data products.

9. **EDOS Backup**. Distribution requests on D3 tape will be supported in order to provide replacement data to EDOS for backup and ECS will be able to request data from EDOS and ingest replacement data.

10. **Multi-Host Scheduling**. Archive and distribution request management will be upgraded. Enhancements include: the ability to manage the same device types across multiple distribution servers; the ability to utilize multiple devices concurrently in the fulfillment of a distribution request; and additional support for fault recovery and request failover.

11. **Archive Improvements**. ECS will make changes to improve the operation of the archive. Raw data about data access and staging activity will be provided to allow the system to be tuned for more optimum loading. Logical Archive ID functionality will be upgraded so that the Science Data Server will not have to know which Archive Server stores each type of granule. This will allow for complete separation of location references stored by the Science Data Server from the physical location of the file on tape. It will also allow data from a single version of a collection to be allocated across instances of the archive for load balancing. To improve scalability, Storage Management Servers will be changed to use native operating system threads instead of DCE threads. In addition, these servers will be upgraded to support parallel AMASS file inserts and retrieves.

12. **Tape Ingest of IGS Browse/Metadata**. Release 6A will add the capability to ingest IGS Format 0 (combined F1/F2) metadata and browse data from 8mm tape.

13. **Ingest of 6A Data Types**. Release 6A will provide the capability to ingest Landsat 7 engineering data from the L7 MOC using the polling without PDR ingest protocol. User access to this data will be supported. The SIPS interface will be used to ingest GLAS and EMOS Historical Data files.

14. **EDC Processing of DPR Attached to a DAR**. In 6A, ECS will provide the additional capability for a user to specify a data processing request (DPR) associated with the submittal of an ASTER Data Acquisition Request (DAR). When the Level 1B product requested by the DAR is ingested, the associated DPR will automatically be submitted for processing at the EDC DAAC. Attached DPRs are only supported for ECS generated products.

The missions supported by Release 6A are shown in Table 3.1-1. Additionally, the new interfaces supported by Release 6A are provided in Table 3.1-2

Table 3.1-1. Releases 6A Launch Highlights

Satellite	Launch Date	SSI&T	Operations Version	6A Performance Capabilities
Landsat-7	15-Apr-99	N/A	4 or later	Full Ingest & Archive
Terra	23-Nov-99	4 or later	4 or later	Processing (1X), Reprocessing (1X)
Meteor/SAGE III	TBD	SIPS I/F Testing	4 or later	Full Ingest & Archive for Processing and Reprocessing
FOO/ACRIM	TBD	SIPS I/F Testing	5A or later	Full Ingest & Archive for Processing and Reprocessing
Aqua	31-Dec-00	5B	6A	Processing (1X for Level 1 and .5x for higher level)
ICESat GLAS	30-Jul-01	SIPS I/F Testing	6A	Ingest and archive for 1X processing

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Table 3.1-2. New Interfaces Supported by Release 6A

Interface	Data Flow	Documentation	Satellite
ECS-IGS	Tape Ingest of IGS Browse/Metadata	Update, ECS	Landsat 7
ECS-Landsat 7 MOC	Landsat 7 Engineering Data	Completed	Landsat 7
ECS-SIPS Machine to Machine	Archived Data for Reprocessing	SIPS ICD, Vol. 0 , Update, ECS	N/A
ECS-ICESAT	ICESAT L0 & Higher-Level	New SIPS ICD, ESDIS	ICESAT GLAS
ECS-V0	Search & Order messages, non-science data	ECS-V0 ICD, Update, ECS	N/A
ECS-EDOS	D3 tape backup	ECS-EDOS ICD, Update, ESDIS	N/A

3.2 Release 6A Requirements

Release 6A has been structured as an upgrade to Release 5B. The Release 6A system provides additional capabilities above those provided in the Release 5B system. These additional capabilities are linked to criteria for Release 6A (as currently planned) and identified in Appendix A. In addition to the new criteria to be verified in Release 6A, the system will have to be tested to verify modifications that addressed certain NCRs that have been written against the ECS system. Future NCR fixes for Release 6A will be identified based upon NCR priority and severity.

3.3 Release 6A Acceptance Test Approach

The objective of the ECS formal testing activity is to verify that the 6A software release is compliant with the established Acceptance Criteria delineated in the Release 6A Requirements Acceptance Tickets ("Tickets").

Systems Engineering (SE) produces the Tickets based on a traceability of the IRDs to Level 3 Requirements, and Level 3 Requirements to Level 4 requirements that will ultimately be baselined in the VDB. SE generates Acceptance Criteria for each Ticket that, in accordance with ESDIS approval, are formulated to verify the requirements associated with that Ticket. The Test Organization is responsible for delineating the test cases that will be generated to test the Acceptance Criteria.

The testing process consists of procedure development, review, updates, ESDIS approval, dry run and formal test. As the Development organization moves into the integration phase of its activities, it begins execution of the integration procedures. By working with Development's

integration team, the Test Team uses this information to finalize the list of acceptance test cases, and begin formal development of actual acceptance test procedures.

The hardware and software environment is analyzed to determine the expected fidelity of VATC testing and identify any test that, due to the DAAC-specific nature of the acceptance criteria, needs to be executed in one or more DAAC environments. The Test Team uses this analysis, the Acceptance Criteria in the Tickets, and the preliminary test procedure list to delineate the final list of tests to be performed.

By observation and support to Development's integration team effort, the Test Team refines each test procedure by first developing a high level flow of test actions, followed by a functional description of test actions and then by the detailed test actions. The Test Team determines test dependencies and interactions, and sequences. As each test procedure is generated, it is posted to the web, and is the object of an internal peer review and updates before being submitted to the Government for review, comment and approval. The final test procedure is included as part of CDRL 411, ECS System Acceptance Test Procedures. Test cases are identified and summarized in Appendix A and the final procedures are maintained on the web at the following: http://dmserver.gsfc.nasa.gov/relb_it/relbit.htm

As soon as software is available, the acceptance tests are dry run whenever possible. Following a successful Installation and checkout in the VATC, and when sufficient confidence is attained that the tests can be performed, the test organization schedules the Test Readiness Review (TRR). The TRR is an internal review under the control of ECS systems engineering. The TRR baselines the Government approved revisions/comments to the test procedures. The TRR also establishes the day-by-day sequence of tests to allow for a metrics-based analysis of test program progress. Following a successful TRR, dry runs and formal tests are conducted in the VATC or PVC. All requirements able to be demonstrated in the VATC are addressed as part of formally witnessed tests.

External interface testing is conducted to the extent possible in each test environment under conditions that simulate operational activities. In cases where it is not possible to achieve a reasonable level of fidelity in the VATC, formal verification of acceptance criteria occurs in one or more DAAC environment(s).

With the deployment of the release software to the field, the test organization travels to each site to participate in the installation and checkout of the system. In addition, the test team performs regression testing and conducts any acceptance tests (or portions thereof) that are required to verify acceptance criteria that could not be verified in the VATC or PVC. The Regression Tests are a set of core and site specific procedures. The core procedures establish confidence in the general capabilities of the deployed system while the site-specific tests demonstrate that the system functions within the unique environment of each site.

Following this on-site activity, the test program concludes with a Site Readiness Acceptance (SRA) to review the completion of the test program at each DAAC. At the SRA, the results of testing are presented.

3.3.1 ECS Acceptance Criteria Tests

The complete set of ECS Acceptance Criteria allocated to Release 6A is verified to ensure that the release meets those requirements needed to provide specified functionality for the missions listed in Section 3.1. This includes verifying all test criteria relating to requirements needed to support the ECS Release objectives for data operations, information management and archive, science processing, networks, and system management at each site. Release 6A functionality and error conditions are verified in the VATC using Acceptance Test Procedures.

3.3.2 Transition Verification

The deployment of this release is in accordance with the transition plan, 211-TP-005-003 (or the latest revision in effect). The verification of the 6A release includes the checkout procedures provided with the software release and DAAC-specified functional verification tests. The latter includes site-specific subsystem checkout procedures, and operational verification procedures.

Transition preparation begins with the design, development, integration, and checkout of the procedures and software (e.g. scripts) required to perform the operational transition of the 6A software release. These activities are the responsibility of Development and are performed initially in the EDF. Concurrently, the Test organization updates the release checkout procedures based on guidance provided by the transition plan. The transition plan identifies functional tests that should be performed after transition, and prioritizes the tests as primary or secondary. Primary tests must be performed after transition whereas secondary tests are performed at the discretion of the DAAC, based on the actual timeline.

Once integrated in the EDF, a second integration and checkout phase begins in the VATC. During this phase, the transition and on-site checkout procedures are exercised and refined. The period in the VATC is also used to train the installation team, including DAAC personnel. This effort results in an improved set of procedures and a cohesive team.

Transition at the DAAC(s) is initiated upon completion of the VATC checkout and the Pre-Shipment Review (PSR). The DAAC staff is responsible for the transition and testing of the release, with support from ECS/Landover. The baseline schedule at each DAAC spans a 3-week period. During the first week, one test mode is transitioned to the new release. The goals during this period include refinement of the transition procedures and additional training for the installation team. The second week includes the transition of the remaining test mode. This transition is used as a dry run of the Ops transition, confirming the capability to perform transition to the target time line. After each of the test mode transitions, the DAAC performs their functional verification tests, including PGE regression testing. Once the test modes have been transitioned to the new release and the DAAC testing is complete, the Ops mode transition is performed. Testing of the Ops transition includes at a minimum the primary checkout procedures. Additional testing, including the secondary checkout procedures and DAAC-specified tests, is performed at the discretion of the DAAC manager.

The local test program concludes with a CSR. The CSR documents the results of the VATC test program including requirement verification status, liens associated with the release and a lien work-off plan, if needed.

3.3.3 Regression Testing

The purpose of Regression Testing is to exercise the major functions of ECS to provide confidence that the addition of new custom or COTS software does not adversely affect the behavior of unmodified code. The Regression Test Plan provides an overview of the methodology used for the selection, development, and execution of Regression Test cases to be used for 6A.

Test cases selected, integrated into threads, are called the Regression Test Suite. Regression Test activities are based on normal production scenarios that will exercise ECS functionality. A Regression Test Suite tailored by facility shall contain these classes of test cases:

- Test Checklist - The purpose of Test Checklists is to provide a list of functional system threads available in the Regression Test Suite.

- Representative sample of tests that will exercise software functions

- Additional tests that focus on software functions likely to be affected by a new release/update

- Tests focusing on software components that have changed

Tests will be selected from existing End-to-End and Acceptance test cases and from previous releases of the ECS software. To select the test set for regression testing, major system functions will be identified, and existing tests will be allocated to a function. Analysis will be performed and duplicate test coverage eliminated. System test threads will be formulated using test procedures.

Then the system test threads will be incorporated into the Test Checklist, which is tailored for each test facility and DAAC. The Test Checklist will be used to select threads that may be impacted by each new patch or release, ensuring complete coverage of the affected software.

A core set of regression test cases will be developed based on threads of current ECS functionality. These test cases will include a scenario beginning with ingest and archive, production, search and order, and distribution. This scenario will be designed to test the basic functionality of the system after a release or patch is installed. By running this test each time, expected results form a baseline for future regression testing of the system.

In addition to the Insertion-Production-Retrieval scenario, several other test cases will be developed based on related functions not tested in the core scenario. Acceptance test cases will be mapped to functional components in the ECS Verification Database. This table is sorted by function, and any functionality not tested in the Insertion-Production-Retrieval scenario will be categorized into threads. These threads will be tested only if the new functionality may affect it.

Finally, new functions that are delivered with each new drop or patch will be analyzed, and a determination will be made as to which components could be affected by the new software. Existing regression test cases will be updated to include the new functionality.

Regression testing will be performed after each new software release. Regression testing will also be performed at the DAACs after installation and checkout of 6A after CSR. These regression

tests will be tailored to include test cases that exercise specific capabilities of interest to the DAAC, in addition to the general capabilities of the 6A software.

Further details of the Regression testing activity can be found in the Regression Test Plan.

3.3.4 Site Testing

ECS will coordinate with each DAAC to plan the on-site delivery of 6A software, including ECS/Landover support for installation and checkout and later transition in operations from 5B to 6A. Deployment of Release 6A is performed in accordance with the 6A Transition Plan.

The ECS test team and DAAC staff will install the release, then perform integration and checkout in a test mode under the direction of the ECS staff. Subsequent site testing lead by the DAAC personnel includes regression testing tailored for the particular DAAC, and DAAC-specific scenarios. These tests include a test scenario that exercises the system in an end-to-end manner to ensure that the system is stable, its performance supports 6A-specified needs, and it operates properly in its intended environment.

This testing is generally not an extension of acceptance testing, however, there may be cases where specific acceptance criteria and interfaces must be tested at the DAAC because resources at the Landover test facility could not support the testing.

While the system is expected to satisfy 6A criteria at each DAAC, there is concern regarding differences between versions of COTS products in the Landover Facility test environments and each of the DAACs. This issue is due to each DAAC having its own timetable for upgrading COTS packages. DAAC-unique configurations and software packages may also result in unexpected system manifestations.

Further details of the on-site activities, such as testing the upgrade of shared modes and transition and rollback testing can be found in the Transition Plan.

3.3.5 COTS Testing

Following the procurement of COTS upgrades is the introduction of the upgrade into Development's domain for analysis, installation, and test within the IDG Cell and the Functionality Lab. Upon Development organization satisfaction, the product is ready for transition to System Test within the VATC. System Test selects the appropriate tests, and the installation is coordinated with the Infrastructure organization. The COTS testing is not witnessed but a Test Execution Form is completed to document the results. Satisfactory completion of the VATC activities results in the product being prepared for a Preliminary Ship Review (PSR). The PSR verifies that all testing and performance milestones have been met and installation instructions prepared and checked out before the product is released for delivery to the customer. A release CCR is generated to accomplish this release. ECS PI CM-1-005 describes the procedures for turnover and installation of COTS products.

Further details of the COTS upgrade activities can be found in the Science System Release Plan.

3.3.6 End to End Testing

ECS plans to perform on-site End to End (ETE) testing for those sites where no testing has been performed earlier. Therefore, ECS has no plans for any DAAC Release 6A ETE testing. ETE testing is conducted as part of regression testing as explained in Section 3.3.3.

3.3.7 Interface Testing

Early interface testing activities take place before formal Acceptance Test. The testing provides an early assessment of the interface compatibility and/or the functionality of the point-to-point systems. Early interface testing permits functionality to be subjected to regression testing, thus eliminating last minute surprises when the formal factory verification test is performed. These integration and test activities are intentionally overlapped with development. The following tests are slated for 6A:

- Aster catalog Interoperability
- Landsat browse/metadata Ingest.

To ensure an understanding of the functionality required for each test, the interface plan is developed as a cooperative effort between ECS and ERSDAC for ASTER Catalog Interoperability and between ECS and the Landsat 7 IGS for Landsat browse/medtadata Tape Ingest. The plan becomes a tool in aiding both sides of the interface in achieving the "informal" test objectives. Informal test procedures will be provided prior to each electronic interface test.

3.3.8 Performance Testing

Release 6A performance verification will be performed under the purview of the System Engineering Performance Verification Center (PVC) organization and does not fall under the scope of Acceptance Testing. Further details covering Performance Testing can be found in the PVC Plan and the Science System Release Plan (SSRP).

4. Test Tools

4.1 Test Tools

This section identifies and describes the test tools (COTS and custom coded software) used in the execution of the Release 6A ECS Acceptance Tests and the generation of test data sets. The tools for requirements traceability, computer aided software test, configuration management, network status and monitoring, and external interface simulators are discussed below. Table 4-1 summarizes the test tool suite available for Release 6A acceptance tests.

Table 4-1.   Release 6A Test Tool Descriptions (1 of 2)

Category	Tool Type	Tool	Tool Description
COTS	Requirements, Capabilities, Features, Criteria, and Test Case Cross Reference Tool	VDB (ECS System Verification Data Base)	The ECS System Verification Database tool provides an audit trail of requirements, capabilities, features, criteria and test cases to which they are linked. The tool also provides the verification status of all of the above.
COTS	Scheduling and Status Reporting	Primavera	Primavera is used to establish the basic day-by-day testing schedule and the status of acceptance test progress.
COTS	Configuration Management Tool	Clear Case	Clear Case is the principal configuration management tool that uses Version Object Base (VOB) to store the software versions.
COTS	Nonconformance Reporting and Corrective Action Tool	DDTS	DDTS is a UNIX change management and bug tracking system that tracks and manages changes throughout the life cycle of a hardware or software product from initial requirements planning to obsolescence in the field. DDTS works in conjunction with ClearCase.
COTS	Network Management Framework	HP Open View	HP OpenView is used to monitor any device that supports the Simple Network Management Protocol (SNMP). This tool aids determining the status of the network and the devices on the network.
COTS	Network Analyzer/Monitor	Network Analyzer/ Sniffer	The Sniffer/Network Analyzer assists in performance testing and monitors and generates traffic on Ethernet and FDDI networks.
COTS	Network Performance Tool	Netperf	Netperf is a benchmark tool that measures various aspects of network performance; primarily focusing on bulk data transfer and request and request/response performance using either the TCP or UDP and the Berkeley Sockets interface.

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Table 4-1. Release 6A Test Tool Descriptions (2 of 2)

Category	Tool Type	Tool	Tool Description
COTS	Capture and Playback Automated Test Tool	XRunner	XRunner is an automated software testing system for Xwindow applications. Xrunner automates the full range of software testing needs. Some of the gained functionality includes output synchronization, text recognition, and a high-level testing mode that operates directly on GUI objects.
COTS	Automated Client/Server Testing System	Load Runner	LoadRunner is an automated testing system for client/server applications on UNIX/X platforms. By running multiple users in parallel off the server, LoadRunner enables the automation of load testing, performance testing, and system tuning.
COTS (ETS)	Production Data Set Generation System	SCTGEN	SCTGEN simulates L0 processing systems like EDOS by generating Production Data Sets (PDS).
COTS (SDPF Toolkit)	Level 0 Simulator	L0sim	Generates L0 products in packet format with associated headers.
COTS (HDF Command Library)	HDF File View Tool	vshow	Allows a user to view an HDF file. The output of vshow can be redirected to a file and be printed.
COTS (ECS Development)	HDF File View Tool	EOSview	Allows a user to view an HDF file in selectable parts including metadata portions.
COTS	HDF File View Tool	HDF Browser	Another HDF view tool.
Customized	Metadata Editor & File Generator	mdedit	Allows a user to modify metadata portion of and HDF file and generate any number of additional HDF files.
Customized	Metadata Simulator	(Perl script) and Tcl/Tk	A GUI based tool that allows a user to populate the science data server with realistic metadata.
Customized	Level 0 (packet) View Tool	PDSview, Crview, PKTview	Allows a user to look at packet headers, and construction record(s)
Customized	Level 0 Cloning Tool	Grangen	Allows user to clone many L0 granules from one granule w/PDR
Customized	file dump utility	dmp	Allows a user to display any file in hexadecimal and ASCII.
	binary file editor	hex	Allows a user to display and edit any binary file.
COTS	Contains CIL/CAL	XRP	XRP allows to track and audit configuration accountability of ECS hardware and software.
Customized	Installation Tool	ECSAssist	Enables the ECS custom code to be installed.

4.2 Test Planning and Statusing Tools

There are two systems in use on ECS that facilitate the acceptance test planning and statusing process. The use of these tools focus on identifying, cross-referencing, and tracking: features,

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capabilities, requirements, criteria, and test cases. These tools are the ECS System Verification Database (ECSVDB) tool and the Primavera Scheduling tool.

4.2.1 ECS System Verification Database (ECSVDB)

The ECS System Verification Database (ECSVDB) tool provides an audit trail for ECS requirements, capabilities, features, criteria and test cases. All acceptance test procedures are linked to Acceptance Criteria, which are in turn linked to Level 4 Requirements traceable to Level 3 system requirements via Tickets. ECSVDB contains the official version of all ECS Release 6A requirements and their mapping to test cases. It also contains the status of the ongoing verification process. As test procedures are executed, their impact on the verification status of related criteria are entered into the individual test folders the Release 6A Criteria Log. The contents of these logs are used to periodically update the features and requirements verification status in the ECSVDB. A variety of ECSVDB reports can be obtained through contact with the ECSVDB Web site http://ecsv.gsfc.nasa.gov/ecsv/reports/status/index.html . Release 6A acceptance testing will be conducted with primary emphasis on the verification of Acceptance Criteria that are linked to functional, error, and performance constraints whose relevance to test procedures are found in the ECSVDB data base.

4.2.2 Primavera Scheduling Tool

Primavera is the basic scheduling resource used by ECS in scheduling and statusing work progress. All test procedure preparation and conduct is scheduled using Primavera. As testing proceeds, Primavera is up-dated to record progress. Primavera also links capabilities being implemented by the development activity to the test cases that will verify the capability's existence and effectiveness.

4.3 Computer Aided Software Test and Performance Tools

The Mercury XRunner and LoadRunner tools are computer aided software test and performance test tools used to assist in the automation of testing. XRunner is designed to automate the test process by capturing, in a script file, keyboard, mouse input and system under test (SUT) responses, and then playing back those inputs and comparing the results to those stored in an expected results directory. LoadRunner is used to simulate a large number of actual users, in order to measure the response time of a server in a client/server application. Both tools offer sophisticated programming capabilities through a C based language called Test Script Language (TSL) that can be used to drive the system under test much more extensively than would be possible with manual testing. It also offers the virtue of repeating a test sequence with fidelity. The XRunner and LoadRunner tools also provide very reliable playback of user input.

The primary use of the XRunner tool is the automation of functional tests that involve heavy use of graphical user interfaces. Examples of such user interfaces are the Release 6A DAAC or SMC operator screens.

LoadRunner is utilized for all response time testing that involves the Release 6A desktop GUI and during End-to-End tests that involve large numbers of test and operations personnel at multiple sites.

Upon completion of a test script execution, both XRunner and LoadRunner automatically generate test execution reports. LoadRunner generates performance graphs for analysis.

4.4 Configuration Management Tools

The ECS Configuration Management Organization (CMO) is responsible for the management and control of the Software Development Library (SDL) and the baseline configuration management of hardware and software. The Nonconformance Reporting (NCR) system is administered by System Engineering for the NCR Control Board. Two software tools are used to support these efforts: ClearCase and the Distributed Defect Tracking System (DDTS).

4.4.1 ClearCase

The CMO utilizes ClearCase to manage and control the Software Development Library (SDL) which is the central repository for ECS software including test verification items. ClearCase, an automated software tracking tool, manages multiple versions of evolving software components; tracks which versions were used in software builds; performs builds of individual programs or entire releases according to user-defined version specifications; and enforces site-specific development policies. ClearCase scripts are provided by CMO to be used throughout the software development life cycle in order to standardize and automate the tracking of the information in the SDL. The project instruction CM-1-016-1, Software Development Using ClearCase, describes the SDL, the role of ClearCase in the SDL, and the associated ClearCase scripts.

The following test items are stored and baselined by the CMO, via the Software Turnover Process, as they are finalized.

- Verification documents, including test plans, procedures, scripts, and reports

- Test data sets, software and hardware configuration, including test tools

- Unit-tested components, data sets, hardware configuration, and COTS software

- Verified system builds

Since Acceptance Testing of the ECS is conducted within a baselined configured environment, ClearCase is installed at each test site; and CMO electronically deploys the binary files (executable) of ECS software at each test site. In order to maintain the integrity of the test script and test data, CMO deploys SVAT's test scripts and test data, in the same manner they deploy ECS binary files. This allows the Acceptance Tester, at each test site, to maintain a baseline of changes to the test script and/or test data for the purpose of local configuration or providing a work around to problems.

4.4.2 Distributed Defect Tracking System (DDTS)

The DDTS records nonconformances and reflects the progress of Nonconformance Reports (NCRs) through resolution and captures necessary information to document that progress. Through the production of management reports, DDTS provides management visibility and metrics to insure that NCRs are being worked in a timely and effective manner. The policies and procedures governing the usage of DDTS on ECS are defined in the Non-Conformance Tracking Project Instruction (PI), SD-1-014.

4.4.3 Baseline Manager (XRP)

The Baseline Manager is used to record and report the design and as-built operational baselines for ECS. It contains the configuration record for baselined items or products. It tracks products by unique identifier, description, location, and model/version, and it identifies the configured articles that are the components of an approved baseline or assembly.   It also provides traceability of baselines and products to previous versions and configurations.

The Baseline Manager tool contains the official Configuration Items List and Configuration Articles List used as a basis for the Functional Configuration Audit and Physical Configuration Audit approved by the ECS CSR and SRA for each release.

4.5 Network Status and Monitoring

The three network tools utilized in acceptance tests are the HP OpenView, Sniffer Network Analyzer, and Netperf. Each are described below.

4.5.1 HP OpenView

The HP OpenView is a network tool that monitors and controls the entire network environment at each ECS site. As a diagnostic tool, it has the capability to isolate faults quickly. The tool allows the user to display a map of the network environment at that local site for the LSM and the maps of all sites at the SMC. These maps are real-time interactive graphical representations which allow the user to detect network problems as they occur without having to update or refresh the display screen, and to diagnose network connectivity. The tool allows the user to create submaps of the map that can be as small as a software component on the system.

4.5.2 Network Analyzer/Sniffer

The Network Analyzer/Sniffer is a fault and performance management tool that analyzes network activity and identifies problems on multitopology and multiprotocol networks.

4.5.3 Netperf

Netperf is a benchmark tool that measures various aspects of network performance. Its primary focus is on bulk data transfer and request/response performance using either the TCP or UDP and the Berkeley Sockets interface.

4.5.4 ECS Assistant

ECS Assistant is an installation tool that enables the ECS custom code to be installed.

4.6 External Interface Simulators

External interface simulators are used during acceptance testing when the real interfacing system is not available. For Release 6A, the simulators used for acceptance testing are described below.

4.6.1 EOSDIS Test System (ETS)

The ETS is primarily designed to support ECS Release 6A and EOS Ground System (EGS) testing. For Release 6A, pending availability, the Low Rate System and the Multimode Portable Simulator is used for EOC testing. In this configuration, ETS provides simulated telemetry data.

4.7 Data Editor, Generators, and View Tools

During acceptance testing, a variety of data editors, generators and viewing tools are used. Each of these tools is described below.

4.7.1 SCTGEN

SCTGEN is a software package with a graphical user interface that simulates CCSDS and non-CCSDS telemetry for both forward and return link data streams. When used as a test tool for EOSDIS it simulates EOS Data and Operations System (EDOS)-generated data products, such as EDOS Data Units (EDU), Expedited Data Sets (EDS), and Production Data Sets (PDS). SCTGEN provides comprehensive error insertion capabilities. SCTGEN generates test data off-line, and does not present a schedule conflict with operational systems. SCTGEN is a portable software system and requires little in terms of resources. The Simulated Consultative Committee for Space Data Systems (CCSDS) Telemetry Generator (SCTGEN) generates telemetry data files and related sets in various formats according to ECS specifications. In conjunction with other ETS components, SCTGEN supports EOS ground system integration, testing, verification, and validation.

4.7.2 Metadata Editor (mdedit)

The Metadata (mdedit) software test tool allows editing of the metadata portion of HDF files and the creation of any number of new files based upon the begin and end times specified. The mdedit tool uses one file as input and produces any number of output files all the same length and basic structure of the input file with the metadata values possibly modified. The original input file is unchanged, and a log file that encapsulates all the important information of the session is recorded.

4.7.3 L0 Granule Generator (Grangen)

The L0 Granule Generator (Grangen) software test tool allows the modification of the packet start and stop time (spacecraft portions of the construction record and packet time stamp in the

secondary header of the packet file of the Production Data Set). The Grangen uses two files as input and then produces a new PDS construction record and packet file(s). The original input files are unchanged, and the new PDS files uses the current time as the set creation time imbedded in the file name and PDS_EDS_ID of the construction record. Grangen allows for PDR product delivery records to be made.

4.7.4 L0sim

The L0sim allows the creation of various level 0 data products, such as CCSDS packet files in various formats. EDOS AM-1 is a sample of the various formats supported. The L0sim runs from the UNIX command prompt. It prompts for input, such as file start and stop date, time interval between packets, APID, and the name of the file containing simulated packet data.

4.8 HDF File Display/View tools

HDF file display and viewing tools are explained below.

4.8.1 EOSview

EOSview is a file-viewing tool that examines and verifies the HDF and HDF-EOS data files. EOSview allows the viewing of the HDF files and individual objects and displaying of all metadata fields and data objects. Attributes and annotations can also be viewed.

4.8.2 HDF Browser

The HDF Browser utility enables the examination of HDF file's hierarchy and components. When an HDF file is opened, the HDF Browser displays the hierarchical structure and organization of the file's contents. The capability for viewing each object in the file is also provided.

4.8.3 vshow

The vshow tool is a command-line utility that is executed from the UNIX shell prompt. Vshow lists and displays information about Vdata objects in a HDF file. In addition, the metadata portion of the HDF file is displayed.

4.8.4 Basic File Display/View/Edit Tools

Basic file display capabilities include UNIX commands such as dmp, hexpert, od-x, od-c, diff and sdiff. These commands can be used for file displays, viewing and editing.

4.9 Test Data

A variety of test data is required to exercise the Release 6A system. This test data will be used in conjunction with the simulators described above to simulate the system. Real test data provided by the instrument teams is used whenever possible. In situations where real data is not available, simulated data or similar heritage data is used for testing. The test data is validated and

placed under configuration control prior to test execution. The test data required for each test is stipulated in the respective Test Procedure and the schedule for need dates is identified in the Primavera schedule. The test data is provided to the Test organization by the Science Office.

Further information concerning the availability of data sets can be found on the Test Data Home Page: http://dmserver.gsfc.nasa.gov/ecstest/.

5. Test Preparation and Execution

This section describes the process by which formal acceptance testing is managed and conducted. The responsibilities of the test manager and test engineers are also described.

5.1 Acceptance Test Preparation

As a fundamental part of the initial test process, ECS System Engineering performs a detailed requirements analysis which includes reviewing and correcting L3 requirement to L4 mappings. The intent is to ensure that the flow-down fully satisfies the Level 3s and IRDs. System Engineering will then define a set of Acceptance Criteria (AC) for the requirements and group them into Tickets. Verification and sell-off of the L4s, L3s and IRDs will be accomplished by virtue of the verification of Acceptance Criteria defined in the Tickets. ACs are functional, error, or performance in nature. As part of the System Verification and Test (SVAT) organization responsibility, a set of test cases will be developed which satisfy the functional and error ACs for a given Ticket. The performance ACs will be verified by the System Engineering Performance Verification Center (PVC) organization. The tests planned to be developed in 6A are listed in Table 5.1-1 and summarized in Appendix A. Wherever possible, one acceptance test is created per Ticket. This mapping is captured and tracked in the VDB along with the requirements and Acceptance Criteria previously discussed.

Upon development of requirement groupings in a Ticket, SVAT assigns resources to each of the requirement groupings. As initial Tickets are developed, the Systems Engineering Architect's Office (AO) will provide them to the responsible SVAT personnel. The initial development of test procedures starts with the draft ticket of grouping of the ACs. SVAT refines the test procedures as the Tickets are developed and approved. The focus is on major capabilities, not underlying subsystems. Functional and error criteria may be verified in the same test. SVAT provides the design summaries of the test procedures in the Acceptance Test Plan, a draft of which is due at IRR. As generation of the procedures concludes, AO and ESDIS review the test procedures developed by SVAT, and ESDIS approves the final test procedures. To simplify the process of verification, each test procedure will uniquely cover any ACs associated with each requirement grouping. That is, the ACs associated with each grouping of requirements will be uniquely mapped to one test procedure. A test procedure may cover more than one AC in a group.

For Release 6A internal Peer Reviews of Acceptance Tests will be conducted. A walk-through of the test package will be conducted with the responsible Test Engineer, Architect Office representatives, software development representatives, Quality Assurance and operations personnel participating. This should streamline the review process turnaround time with a single review of the material. The updates to the procedure as a result of these reviews will make the test ready for ESDIS review. The final process for ESDIS approval is the same as the process for test procedures developed for Pre-launch Releases.

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Table 5.1-1. 6A Test Case Summary

	Test	Ticket	Level-3 Requirements	Level-4 Requirements	Capabilities	Functional Components	Error Conditions	Performance Constraints	VATC	PVC	GSFC	LaRC	EDC	NSIDC
1	6A09030 - Additional Media Types	RS6A01	1	11	4	7	4	0	X	X				
2	6A10000 - VO Gateway Enhancements	EN6A02	1	14	1	2	0	0	X					
3	6A10020 - Granule Deletion	EN6A04	1	17	1	2	4	1	X	X				
4	6A08000 - Machine-to-Machine Gateway	RM6A05	3	98	2	11	4	0	X					
5	6A10050 - ftp Pull Subscriptions	RM6A04	1	2	1	2	0	0	X					
6	6A09080 - Attached DPR	RM6A07	1	37	1	5	2	0	X					
7	6A10070 - Ingest 6A Data Type	RS6A06	3	1	1	3	7	1	X	X				
8	6A09040 - Distribution Compression	RS6A02	2	6	2	3	0	0	X	X				
9	6A09050 - EDOS Backup	RS6A03	3	9	1	4	0	0	X					
10	6A09000 - IGS Tape Ingest	EN6A01	3	1	1	2	8	1	X	X				
11	6A10030 - Multi-host Scheduling	RS6A04	3	15	2	6	5	0	X	X				
12	6A09020 - Reprocessing	RM6A01	1	8	2	4	0	0	X					
13	6A10040 - Archive Improvements	RS6A05	5	22	4	6	3	0	X					
14	6A10080 - Ingest Datbase Data Type Verif.	RS6A06	3	1	1	3	7	1	X	X				

SVAT will follow established standards for documenting test procedures. Each test procedure will identify the incremental steps for verifying the Acceptance Criteria for that test.

SVAT will conduct dry runs followed by formal tests to verify the approved ACs with designated witnesses and using the approved test procedures. Dry runs are scheduled as soon as pre-turnover release software is available in order to exercise capabilities early and to provide feedback to the development organization in the form of NCRs. The acceptance tests will be performed in the VATC.

The daily progress of the test activity is reviewed by the test leads at internal test status meetings held on Monday, Tuesday and Thursday, and at an all test staff review meeting held each Wednesday. In addition, the daily test status is presented at the Daily Status Reviews (DSR) meeting on Monday through Wednesday with an expanded weekly test presentation given each Thursday.

Regression testing is performed following the installation of each software release, as well as any incremental major software build, to ensure no degradation or modification has occurred to the release already tested. The regression tests are comprised of a representative suite of procedures pulled from the Acceptance Tests.

5.2 Test Execution

The test procedures are derived from the acceptance criteria in the tickets and the software integration test activity. The generation of the test procedures is begun with the availability of either of these inputs and the final drafts are completed with both completion of both. Table 5.1-1 delineates the summary of the 6A Release allocation of Level 3, Level 4, capabilities and criteria to test cases.

The software release is installed in a dedicated mode(s) in the VATC for formal testing. Following dry runs to ensure successful execution, formal tests are conducted to verify the set of Release 6A criteria reflected in Appendix A of this plan. All applicable criteria are demonstrated in the VATC as part of formally witnessed tests. External interface testing is conducted to the extent possible in each test environment under conditions that simulate operational activities.

Test execution in the VATC concludes with a Consent to Ship Review (CSR). The CSR documents the results of the VATC test program including verification status, liens associated with the release and a lien work-off plan if needed. Successful conduct of the CSR is predicated on satisfactory Functional Configuration Audit (FCA) results and resolution or agreed-to liens on severity 1 and 2 NCRs. The successful CSR milestone marks the ESDIS approval to ship the Release to the field.

Before deployment of the release, ECS ensures close coordination with each DAAC to plan the on-site delivery. This includes on-site ECS/Landover support for test execution and post-test analyses that may be required. On-site deployment is concluded with the conduct of a Site Readiness Assessment (SRA) at each DAAC. Following the SRA, with the release to the sites in the field, the responsibility and control for the system is turned over to the M&O organization. The M&O staff will conduct the CCB for changes and manage NCR fixes and modifications. Successful completion of the SRA is based on satisfactory FCA results and no severity 1 or 2 NCRs against new capabilities as a result of the site testing.

5.3 ECS Test Process

The ECS Test Process is an interconnected activity flow that incorporates Government and Contractor organizations, different venues and defined interdependencies. The process is described in the following paragraphs.

Historically, the Development organization understands a given software release's functionality, and its "look and feel." The Test Organization is familiar with system level requirements and acceptance criteria, as well as the operational usage of the software. In order to create some "synergism", test resources become involved with development earlier in the Release lifecycle. In this way, test resources become more familiar with a given release much earlier, while Development can gain insight concerning the needs of formal testing. As part of the Release lifecycle, Development will develop integration test scenarios consistent with system level capabilities. Test engineers can then support integration of the software supporting these scenarios, but can also begin initial development of SVAT Test Procedures.

At the completion of the software Turnover and the integration and checkout in the VATC, an internal Test Readiness Review (TRR) will be held. This milestone represents the formal turnover of the software release to the SVAT Organization. This gate will be strictly monitored to ensure that all integration has been successfully completed, all necessary documentation or installation procedures needed in the VATC are available and approved, required test data and test configurations are available, and any other important information is communicated to the SVAT Organization prior to the start of formal testing.

Test folders are created for each acceptance test procedure and maintained throughout the remaining Release 6A test program. Each test activity is recorded on Test Execution Forms and filed in their individual test folders. During the test process, discrepancies are noted on the Test Execution Form. Discrepancies are then recorded on NCRs, rated by the test engineer according to severity, and filed in DDTS. Test folders are returned to a secure location, under configuration control, after completion of each test session. Each folder may be subjected to a test folder audit to ensure folder completeness and accuracy.

As-executed procedures and workarounds are documented as a result of test dry runs and formal executions. These are recorded on the test execution sheets that are maintained in the test folder for each test procedure. Workarounds to circumvent system deficiencies found during these tests are recorded on the Test Execution Forms in the test folders of the test case that uncovered the deficiency. The workaround is also recorded on the NCR and recorded in DDTS as part of the NCR process.

The preparation of test results begins with the routine recording of test procedure execution results on the Test Execution Form maintained in the Test Folders. SVA test results are maintained from the working test level and passed upwards for their incorporation in the Test Folders, DDTS and the Verification Database. Test results are recorded on the Test Execution Form and transcribed to the Criteria Log maintained by each tester. These results are then entered into the VDB using the PI (TT-1-001-3). This information and others will form the basis for the preparation of acceptance test results.

Whenever possible, the formal verification of all requirements will be accomplished locally in the VATC, or the EDF in the case of unit-level error testing. On rare occasions, due to the DAAC-specific nature of the acceptance criteria, it may be necessary to complete the Release 6A Test Program at a given DAAC as part of scheduled Operational Installation Check-out and Test (ICT) activities. These tests will be coordinated in advance with DAAC, ESDIS, and QA personnel to provide for the necessary formal witness and sign-off environment.

5.4 Release 6A Test Procedures

All 6A test procedures as listed below will be executed in the VATC to verify the criteria that have been incorporated in Release 6A. Appendix A contains a summary of the objective of each Test Case and the mapping to the criteria contained in the appropriate Ticket.

	Test Number - Procedure Title
1	**6A09030 - Additional Media Types**
2	**6A10000 - VO Gateway Enhancements**
3	**6A10020 - Granule Deletion**
4	**6A08000 - Machine-to-Machine Gateway**
5	**6A10050 - ftp Pull Subscriptions**
6	**6A09080 - Attached DPR**
7	**6A10070 - Ingest 6A Data Type**
8	**6A09040 - Distribution Compression**
9	**6A09050 - EDOS Backup**
10	**6A09000 - IGS Tape Ingest**
11	**6A10030 - Multi-host Scheduling**
12	**6A09020 - Reprocessing**
13	**6A10040 - Archive Improvements**
14	**6A10080 - Ingest DataBase Data Type Verification**

5.5 Release 6A Test Schedule

Primavera is the basic scheduling resource used by ECS in scheduling all test activities. A Primavera schedule listing includes the Test case number, test case title, test site, and planned date for each test to be executed for Release 6A Acceptance Testing. Appendix B of this document contains the Release 6A Acceptance Test Schedule listing from Primavera as of the date of print of this document. The Primavera schedule tool should be consulted to obtain up-to-date schedule information.

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Appendix A. Acceptance Test Summaries

A summary of each test and the mapping of Criteria to Test Cases is attached.

1. Additional Media Types

Test Procedure No.: 6A09030			Ticket Version: TBD	Date Executed:	Test Conductor:
Title			Additional Media Type (CDROM and DLT)		
Objective			The objective of this test is to demonstrate the capability of the CD-ROM and DLT media devices delivered in the 6A release. The test will show that a select group of data products can be delivered on the CD-ROM and DLT formats with specific emphasis on EDG, GDS, Subscriptions, and On-demand processing orders. Deliveries will be conducted in two modes to demonstrate that servers can coexist in multiple modes. Successful acquires are recorded by the DDIST GUI. Subscriptions are entered via the Subscription GUI. EDG, GDS, and On-demand processing orders are entered through the EDG Client. All supported formats will be tested. An additional acquire of a extremely large data set will be attempted. Device functions will be demonstrated through the Storage Management GUI for such functions as mount and dismount, and taking the devices on and off-line without disturbing the actual server and to monitor requests and device status. This will include the capability to transfer devices from one mode to another on the same machine. Server functions will be demonstrated through HP Openview to show that multiple instances for the CD-ROM and DLT servers can be started, shutdown, and monitored independently. This includes warm and cold starts and recovery of a distribution request generated by a retriable server manager fault. Finally, error handling capabilities will be demonstrated for recovery of a distribution request based on a retriable device error for each media type.		
Criteria Mapping					

Ticket ID	Critera ID	Criteria Key	Criteria Type	Criteria Text	Test Steps
RM_6A_01	10		FC	Demonstrate successful distribution of data product orders via CD-ROM, including all supported CD-ROM formats.	
RM_6A_01	20		FC	Demonstrate successful distribution of data product orders via DLT	
RM_6A_01	30		FC	Demonstrate that the new media distribution options (including all supported CD-ROM formats) are available via these order interfaces: • EDG originated product orders, including Landsat media orders • GDS originated product orders • Subscriptions • On-demand processing orders	
RM_6A_01	40		FC	Demonstrate the device management functions for CD-ROM (mount, un-mount, taking device off-line / on-line)	
RM_6A_01	50		FC	Demonstrate the device management functions for DLT (mount, un-mount, taking device off-line / on-line).	

RM_6A_01	60		FC	Demonstrate the start-up, monitoring via HP/OV, and shutdown of DLT manager and the CD-ROM managers. Verify that the multiple instances of each device manager are correctly identified on the HP/OV monitoring display and can be shutdown independently.	
RM_6A_01	70		FC	Demonstrate that instances of the DLT manager and the CD-ROM manager can co-exist in multiple modes. Verify that DLT devices and CD-ROM devices an be transferred from a device manager in one mode to the device manager on the same platform, but operating in a different mode.	
RM_6A_01	80		EC	Demonstrate warm and cold restart for the CD-ROM manager. Demonstrate the recovery of a distribution request affected by a retriable CD-ROM manager fault.	
RM_6A_01	90		EC	Demonstrate warm and cold restart for the DLT manager. Demonstrate the recovery of a distribution request affected by a retriable DLT manager fault.	
RM_6A_01	100		EC	Demonstrate error handling for and recovery from CD-ROM device and media errors. Demonstrate the recovery of a distribution request affected by a retriable CD-ROM device error.	
RM_6A_01	110		EC	Demonstrate error handling for and recovery from DLT device and media errors. Demonstrate the recovery of a distribution request affected by a retriable DLT device error.	
RM_6A_01	120		EC		

Test Information	
Test Input	1) L70RF1/Browse/L70RF2 subinterval data containing 8 scenes 2) GDS originated products (AST_L1A and AST_L1B) 3) Selected Subscriptions data 4) Aster on-demand processing orders (AST_L1B Special Products) 5) MOD00 (Large data set)
Test Output	1) CD-ROM data acquire from EDG, GDS, Subscriptions, and On-demand processing orders from two modes 2) DLT data acquire from EDG, GDS, Subscriptions, and On-demand processing orders from two modes 3) CD-ROM and DLT device management functions via the Storage Management GUI 4) CD-ROM and DLT startup, shutdown, and monitoring via the HP/OV 5) CD-ROM and DLT device error output as report by device logs and DDIST GUI

Data Set Name	Path Name	Description
TBD	TBD	TBD

Test Configuration	1) Standard VATC Configuration – All Servers Running to include STMGT GUI, DDIST GUI, EDG Client, Subscription GUI 2) 2 Modes will be required 3) SDSRV, DDIST, STMGT, DMS, CLS, EDG 4) t1acs03, t1wkg01, t1dps01, t1acg01, t1drg01, t1ins01, t1dms02 5) Archive available data: L70RF1, L70RF2, Browse, AST_L1A, AST_L1B, L70RWRS, L7CPF, AST_L1B Special Products

2. VO Gateway Enhancements

Test Procedure No.: 6A10000	Ticket Version: TBD	Date Executed:	Test Conductor:
Title	V0 Gateway Enhancements (Non-science collections; result set attributes)		
Objective	This test will cover the capability for the user to be able to perform a spatial-temporal search. Followed by an order for data in ECS non-science collections from the EDG client, to include: Production Histories, Failed PGE file, FDD data, Science Software. The test will also check to make sure that the EDG client can by-pass the Processing Options flags for ordering production history associated with science granules. The user will also be able to limit the number of attributes and their values associated with granules that are sent from the V0 to ECS Gateway back to the V0 Web Client as part of an INVENTORY_RESULT message. The user will also verify that the SDSRV is sending only those attributes specified in the INVENTORY RESULT message across the interface to the GTWAY.		

	Preconditions: Users of the EDG client will be able to submit spatial temporal queries against the "non-Science" collections and receive search results without requiring that they have first performed a search on the associated science collections. For orders, the EDG client will also provide the capability for the user to order data from non-Science collections, without requiring that they be ordered or specified in conjunction with their associated science collections. Users of the EDG client will be able to search the inventory and specify what attributes they would like to see returned in their results. The ECS will return only these attributes between its internal interfaces (Database-SDSRV, SDSRV - DMS-GTWAY), and the interface between the ECS (DMS-GTWAY)and the EDG client.

Criteria Mapping					
Ticket ID	**Criteria ID**	**Criteria Key**	**Criteria Type**	**Criteria Text**	**Test Steps**
EN_6A_02	10	1707	FC	Demonstrate the ability to perform a spatial-temporal search. Followed by an order for data in ECS non-science collections from the EDG client, to include: • Production Histories • Failed PGE file • FDD data • Science Software Verify that the EDG client can by-pass the Processing Options flags for ordering production history associated with science granules.	

EN_6A_02	20	1708	FC	Demonstrate the ability to limit the number of attributes and their values associated with granules that are sent from the V0 to ECS Gateway back to the V0 Web Client as part of an INVENTORY_RESULT message. Verify that the SDSRV is sending only those attributes specified in the INVENTORY RESULT message across the interface to the GTWAY.	

Test Information	

Test Input	➢ User Information ➢ Search Type ➢ Geographic Region ➢ Data Set ➢ Data Center ➢ Other Search Criteria ➢ Order for Production history ➢ Order for Failed PGE ➢ Order for FDD data
Test Output	➢ Data granules with production history ➢ Data Granules match search conditions

Data Set Name	Path Name	Description
TBD	TBD	TBD

Test Configuration	➢ t1ins01, t1acs03, t1wkg01, t1dps01, t1drg01, t1acg01, t1mss06 ➢ Sybase, Netscape, V0Gateway, SDSRV, HdfEos, DDIST, STGMT, Archive, MSS, etc

3. Granule Deletion

Test Procedure No.: 6A10020	Ticket Version: TBD	Date Executed:	Test Conductor:

Title	Granule Deletion
Objective	This test case verifies the capability for a DSS operator to delete granules from the inventory/archive on demand. A command line utility is available for selecting granules for deletion from the archive (DFA), with an option to also delete from the inventory (PHYSICAL DELETE). A confirmation is generally available, but can be suppressed to allow for background execution. Both cases will be exercised during this test. Care must be taken when running the script in the background so desired data is not accidentally deleted. Science Data Server logs will be inspected for messages related to deletions, but a separate log is also available for immediate inspection of only deletion messages. Both logs will be verified during this test. Granules can be selected for deletion several different ways. • ESDT ShortName, Version and granule time coverage • ESDT ShortName, Version and granule insert time range • Separate Input file containing SDSRV Granule IDs • Separate Input file containing ShortName, Version, and Local Granule ID Each scenario will be used for deleting granules. The number of granules returned will be verified by manually making the same query in the data base using SQL commands. Granules will be deleted from both the inventory and the archive and from the archive only, and in the foreground and via background jobs. It will be verified that all occurrences of a file in the archive are deleted when requested, such as from a primary and a backup archive location. It will be verified that Browse, QA and PH granules associated with physically deleted granules are also deleted if not referenced by any other granules. Normal Science Data Server processing will be going on while deletions are requested, to demonstrate that inserts, acquires and searches are not affected by deletion of data. Error conditions tested include attempts to delete granules that are still being referenced by other granules; unauthorized users are indeed halted from deleting data; recovery from Archive Server, Science Data Server and Science Data Server DBMS server faults occurring during deletion requests.

Criteria Mapping					
Ticket ID	**Criteria ID**	**Criteria Key**	**Criteria Type**	**Criteria Text**	**Test Steps**
EN_6A_04	20	1700	FC	Verify that an operator that is not authorized for granule deletions cannot perform this operation.	
EN_6A_04	30	1701	EC	Attempts to delete granules that are still being referenced by other granules. Verify that referential integrity constraints are being enforced.	
EN_6A_04	40	1702	EC	Demonstrate the recovery from a STMGT archive server fault (e.g. platform failure) occurring during a bulk delete requests.	
EN_6A_04	50	1703	EC	Demonstrate the recovery from a SDSRV server fault (e.g. platform failure or SDSRV crash) occurring during a bulk delete requests.	
EN_6A_04	60	1704	EC	Demonstrate the recovery from a SDSRV DBMS server fault occurring during a bulk delete requests.	

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EN_6A_04	10	1706	FC	Using a user ID authorized for granule deletions, demonstrate the operator interface for the deletion of granules, including the mechanisms for selecting the granules to be deleted and the confirmation of the deletion. Verify that: 1. Granules can be selected by ESDT short name, ESDT version and granule time coverage. 2. Granules can be se3lected by ESDT short name, ESDT version and granule insert time range. 3. Granules can be specified in a separate input file containing either SDSRV Granule Ids or local Granule Ids with short name and version ID 4. The number of granules selected for deletion is displayed to the operator and the operator is asked to confirm the deletion. 5. The operator can suppress the confirmation prompt via a command line argument. 6. Granules are deleted from both the inventory and the archive or from only the archive, depending on operator choice. 7. BROWSE, QA, and PH granules associated with physically deleted granules are deleted if no longer referenced otherwise. 8. The files associated with the deleted granule are deleted from all archive locations (including back-up locations). 9. The deleteions are logged as required to the SDSRV application log file and the ooperator specified granule deletion log file. 10. Granule deletions can be performed during normal SDSRV processing, i.e., while other requests such as insert, acquire, and searching are in progress.

Test Information

Test Input	➢ Insert, Search and Acquire Requests submitted from the EDG Client and from Ingest ➢ Deletion Requests ➢ SQL commands

Test Output	➢ Successful Insert, Search and Acquire Requests ➢ Data deleted from the archive when requested ➢ Data deleted from the archive and the inventory when requested ➢ SQL search results

Metadata/Data Set Name	**Path Name**	**Description**
TBD	TBD	TBD

Test Configuration	➢ EcDsScienceDataServer, EcDsDistributionServer, EcDsStPullMonitorServer, EcDsStArchiveServer, EcDsStStagingDiskServer EcDsStStagingMonitorServer, EcClDtUserProfileGateway, EcIoAdServer, EcDsStFtpDisServer, EcDsStIngestFtpServer, EcInPolling, EcInReqMgr, EcInGran ➢ t1acs03, t1dps01, t1acg01, t1drg01, t1ins01 ➢ EDG Client ➢ ESDT: TBD

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4. Machine-to-Machine Gateway 6A

Test Procedure No.: 6A08000	Ticket Version: TBD	Date Executed:	Test Conductor:

Title	Machine-to-Machine Gateway
Objective	The purpose of this test is to verify SIPS ability to reprocess data externally to ECS via a reliable, high-speed gateway that provides search and order capabilities. This test verifies MTMGW server which provides an automated inventory search, product request, and integrated search and order capability. The ability of SDSRV to accept inventory searches and product requests from the MTMGW and to return search results to the MTMGW is verified. Also verified by this test is the ability of MSS to store SIPS order identification data in its order tracking database to prevent redundant orders and allow operators to view SIPS order status. This test also makes sure that DMS provides type information for qualifying metadata specified in a SIPS search request.

Criteria Mapping					
Ticket ID	Critera ID	Criteria Key	Criteria Type	Criteria Text	Test Steps
RM_6A_05	10		FC	Demonstrate the authentication by the MTMGW. Verify that commands cannot be submitted except via ssh after the client has been authorized for use of the MTMGW.	
RM_6A_05	20		FC	Submit a number of concurrent search requests and specify various combinations of ECS core and product specific attributes for inclusion in the result. Verify the following: Requests are processed concurrently as long as fewer than the configured maximum are in progress Requests are rejected with the appropriate error indication if the configured maximum is exceeded The results of the searches are correct	
RM_6A_05	25		FC	Submit search requests that include a spatial search criterion and span collections using two different spatial types (Gpolygon and bounding rectangle). Use the generic spatial coverage attribute to request that the spatial coverage of each granule be included in the search result. Verify the following: 1. The search is returns the correct result. 2. The correct spatial coverage is included for each granule, corresponding to the type of its spatial attribute. 3. The various search limits are enforced and search truncation is correctly reported to the client.	

RM_6A_05	30		FC	Use several user accounts that are configured differently to submit product orders for one and several granules based on: 1. ECS granule UR; 2. ESDT short name, version, and ECS granule ID; 3. ESDT short name, version, and local granule ID. Verify the following: 1. The correct order tracking information is created 2. The correct User ID is used for the acquire 3. The correct distribution priority is assigned 4. Contact and shipping information is correctly extracted from the product request and user profile 5. Distribution options are correctly extracted from the product request and used in the acquire 6. The external request ID can be displayed in the MSS GUI 7. The order ID is returned to the external client	
RM_6A_05	40		FC	Submit product orders for BROWSE, QA, and PH granules associated with one and several granules specified via: 1. ECS granule UR; 2. ESDT short name, version, and ECS granule ID; 3. ESDT short name, version, and local granule ID. Verify the following: 1. The correct granules are being acquired 2. The correct order tracking information is created 3. The correct User ID is used for the acquire 4. The correct distribution priority is assigned 5. Contact and shipping information is correctly extracted from the product request 6. Distribution options are correctly extracted from the product request and used in the acquire 7. The external request ID can be displayed in the MSS GUI 8. The order ID is returned to the external client	
RM_6A_05	50		FC	Combine searches and orders into integrated search & product requests. Verify the following: 1. The integrated requests are processed successfully as long the search results are below the configured granule and size limits 2. The integrated requests are rejected with the correct error if the search result exceeds the configured granule or size limit or SDSRV limit	
RM_6A_05	60		FC	Combine searches, product requests, and integrated search and product requests into a concurrent workload coming from at least two different simulated clients. Verify that the gateway successfully processes the requests concurrently and returns the responses to the correct clients.	

RM_6A_05	70		FC	Demonstrate the start-up, monitoring, and shut-down of the MTMGW server via the system console.	
RM_6A_05	80		FC	Demonstrate that multiple instances of the MTMGW can co-exist in the same modes on the same and different platforms.	
RM_6A_05	90		FC	Demonstrate that instances of the MTMGW can co-exist in multiple modes on the same and different platforms.	
RM_6A_05	100		FC	Verify that the gateway logs message receipt and sending, errors, and start-up and shut-down in accordance with the requirements	
RM_6A_05	110		FC	Demonstrate the handling of syntax errors in the submitted request.	
RM_6A_05	120		FC	Demonstrate the handling of a fault in the communication with the external client.	
RM_6A_05	130		FC	Demonstrate the Fault Handling and Recovery of the Gateway interfaces with the ECS services it uses, namely, handling of faults in: 1. User Profile Server 2. Order Tracking Server 3. SDSRV Server 4. Data Dictionary Server 5. Registry Server	
RM_6A_05	140		FC	Interrupt the gateway or the gateway-to-external client communication while it is processing an integrated search and product request using an external request ID. Resubmit the request with the same external request ID and verify the following: 1. the request is redone if the product order was not yet submitted to ECS 2. the request is not redone if the product order was already submitted to ECS	
Test Information					

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Test Input	• Concurrent search requests
	• Product order for granules based on ECS granule UR, ESDT short name, version, ECS granule ID, and local granule ID
Test Output	• Order tracking output includes the User ID
	• User ID for the acquire
	• Distribution priority
	• Contact and shipping information
	• Media distribution options
	• External request ID
	• Order ID to the external client

Data Set Name	Path Name	Description
TDB	TDB	TDB
Test Configuration	• All machines, an external client with the ssh client on it	
	• IDG, SDSRV, MSS and DMS servers	
	• All modes (OPS, TS1, TS2, SHARED)	
	• Search result limit, concurrent requests limit; default MSS userids for SIPS requests	
	• A separate MTMGW server can be allocated and configured for each SIPS	
	• Servers can be limited to supported ESDTs (Landsat ESDTs will not be supported)	

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5. ftp Pull Subscriptions

Test Procedure No.: 6A10050	Ticket Version:	Date Executed:	Test Conductor:

Title	FTP Pull Subscriptions
Objective	This test will verify the ability of the Subscription Service to perform actions on behalf of the Client. The purpose of this test is to prove that the Subscription Service GUI is able to submit subscriptions of two different users that specify an FTP Pull Acquire as an action. The actions are specified during a subscription request and executed independently when the specified events are triggered. This test confirms the capability to: • Submit FTP Pull Subscriptions for two different users from the Subscription Service GUI. • Demonstrate the triggering of the FTP Pull Subscription Actions associated with the submitted subscriptions.

Criteria Mapping					
Ticket ID	**Criteria ID**	**Criteria Key**	**Criteria Type**	**Criteria Text**	**Test Steps**
RM_6A_04			FC	Using the subscription GUI, submit FTP Pull Subscriptions for two different users.	
RM_6A_04			FC	Demonstrate the triggering of the FTP Pull Subscription Actions associated with the submitted subscriptions.	

Test Information		
Test Input	• Input from the Keyboard to be filled in the Subscription Service GUI	
Test Output	• E-Mail messages • Information display on Registry GUI screen	

Data Set Name	Path Name	Description
Test Configuration	• t1ins02 • The Subscription Service GUI • Ingest requests for an ESDT must be prepared to trigger insert subscription actions.	

6. Attached DPR

Test Procedure No.: 6A09080	Ticket Version: TBD	Date Executed:	Test Conductor:

Title	Attached DPR (EDC Processing DPR Attached to a DAR)
Objective	This new capability allows users that submit a DAR to specify any higher level processing they want to be performed on the resulting granules. This test will consist of the following sections : **Section 1:** A) DARs are submitted with attached standing on-demand processing requests for different higher level ASTER products. ASTER L1A is ingested followed by the standard L1B that match these DARs and two L1A and L1B that does not match any of these DARs. B) DARs are submitted with attached standing on-demand processing requests for different higher level ASTER products. The standard L1B is ingested followed by L1A; Several L1A/L1B pairs matching one of the DAR's are ingested. **Section 2:** • One DAR is submitted with attached on -demand processing requests for two different higher level ASTER product. A) Several L1A are ingested followed by the corresponding standard L1B that match this DAR B) One L1A and L1B that do not match any of the Submitted DARs are ingested C) A non -standard L1B with a DAR id matching the submitted DAR are ingested. **Section 3:** • This section Verifies that when allowing DARs to expire, (A) the expiration time period for attached DPRs can be configured separately from other expiration times (B) After the operator configured time interval for expiring attached DPRs has passed, the state of the corresponding standing orders are changed to expired (C) An expiration notification is sent to the correct e-mail address and has the correct contents **Section 4:** This section verifies that A) no e-mail notification is sent to the user by ECS, B) order status is updated correctly, C) An A STER on -demand request generated from the standing order is not affected by cancellation and D) Ingesting an ASTER granule matching the cancelled request does not trigger a new on-demand request . Cancelation of a standing on -demand order is done using the MSS GUI. **Section 5:** This section verifies that the user receives an error status when attempting to submit a DAR with an attached DPR when the ODPRM and MSS Accountability are not up.

Criteria Mapping					
Ticket ID	**Criteria ID**	**Criteria Key**	**Criteria Type**	**Criteria Text**	**Test Steps**

| RM_6A_07 | 10 | TBD | FC | Submit three DARs with attached standing on-demand processing requests for different higher level ASTER products. Ingest L1A followed by the standard L1B that match these DARs, such that one of them matches two L1B; also ingest two L1A & L1B that do not match any of these DARs. Verify the following:
1. The ODFRM interface can be used to enter the attached processing requests
2. The user ID, DAR ID and DAR Expiration were correctly passed in
3. The standing on-demand processing requests can be viewed in the MSS Accountability GUI with their DAR ID and DAR Expiration.
4. The initial states of these orders and requests are "Awaiting DAR Results".
5. The user, distribution and other ordering information are correct.
6. As each L1B granule is ingested, an on-demand processing order & request are initiated for the matching standing order.
7. The on-demand processing order information is correct and includes DAR ID and original order ID.
8. An order confirmation e-mail is sent to the correct e-mail address and has the correct contents.
9. The state of each standing order after its first on-demand order was generated, is "Awaiting More DAR Results".
10. The MSS GUI can filter on standing orders and on the new states "Awaiting DAR Results" and "Awaiting More DAR Results".
11. The remaining processing of the on-demand orders is the same as in Release 5B.
12. No on-demand processing orders are generated for the L1A and L1B that do not match any standing order. | |
| RM_6A_07 | | TBD | FC | Repeat the previous test, but ingest the L1A after the standard L1B that match these DAR have been ingested.   This time, ingest several L1A/L1B pairs matching one of the DARs. Verify the following:
1. The ODFRM interface can be used to enter the attached processing requests
2. The user ID, ASTER DAR ID and ASTER DAR Expiration time were correctly passed in
3. The standing on-demand processing requests can be viewed in the MSS Accountability GUI with their DAR ID and DAR Expiration.
4. The initial states of these orders and requests are "Awaiting DAR Results".
5. The user, distribution and other ordering information are correct.
6. As each L1A granule is ingested, an on-demand processing order & request are initiated for the matching standing order, specifying the corresponding L1B as the input.
7. The on-demand processing order information is correct and includes DAR ID and original order ID.
8. An order confirmation e-mail is sent to the correct e-mail address and has the correct contents.
9. The state of the standing order after the first on-demand order was generated, is "Awaiting More DAR Results".
10. The remaining processing of the on-demand orders is the same as in Release 5B.
11. No on-demand processing orders are generated for the L1A and L1B that do not match any standing order. | |

RM_6A_07	20	TBD	FC	Submit one DAR with attached standing on-demand processing requests for two different higher level ASTER products . Ingest several L1A followed by the corresponding standard L1B that match this DAR. Also ingest one L1A and L1B that do not match any of the submitted DARs. Also ingest a non-standard L1B with a DAR id matching the submitted DAR. Verify the following: 1. The ODFRM interface can be used to enter the attached processing requests 2. The user ID, ASTER DAR ID and ASTER DAR Expiration time were correctly passed in 3. The MSS GUI can be used to filter on the standing on-demand processing requests, and they can be viewed with their DAR ID and DAR Expiration Time. 4. The initial state of each order and request are "Awaiting DAR Results". 5. The user, distribution and other ordering information are correct. 6. As each L1B granule is ingested, the on-demand processing order & request are initiated for the matching standing order, specifying the corresponding L1B as the input. 7. The on-demand processing order information is correct and includes DAR ID and original order ID. 8. An order confirmation e-mail is sent to the correct e-mail address and has the correct contents. 9. The state of the standing order after the first on-demand order was generated, is "Awaiting More DAR Results". 10. The remaining processing of the on-demand orders is the same as in Release 5B. 11. No on-demand processing orders are generated for the L1A and L1B that do not match any standing order, nor for the non-standard L1B.	
RM_6A_07	30	TBD	FC	Allow two of the DARs to expire. Verify the following: 1. The expiration time period for attached DPRs can be configured separately from other expiration times . 2. After the operator configured time interval for expiring attached DPRs has passed, the state of the corresponding standing orders are changed to expired. 3. An expiration notification is sent to the correct e-mail address and has the correct contents. 4. Ingesting a matching L1B/L1A pair will not lead to the generation of an on-demand processing request. 5. After the operator configured time interval for removing expired orders has passed, the standing orders are removed from the Planning database.	
RM_6A_07	40	TBD	FC	Use the MSS GUI to cancel a standing on-demand order. Verify the following: • No e-mail notification is sent to the user by ECS • The order status is updated correctly • An ASTER on-demand request generated from the standing order is not affected by the cancellation • Ingesting an ASTER granule matching the cancelled request does not trigger a new on-demand request	
RM_6A_07	50	TBD	FC	Submit the attached DPR referenced in the earlier criteria directly via the ODFRM screens that permit a user to log in and enter an existing DAR ID and DAR expiration time. Verify that the same standing on-demand processing orders are generated.	

RM_6A_07	60	TBD	EC	Attempt to submit a DAR with an attached DPR when the ODPRM is not up. Verify that the user receives an error status after retries failed.
RM_6A_07	70	TBD	EC	Attempt to submit a DAR with an attached DPR when the MSS Accountability Server is not up. Verify that the user receives an error status after retries failed.

Test Information		

Test Input	• L1A/B Data Sets • DAR requests through DART	
Test Output	• Order status • E-mail notifications	

Data Set Name	Path Name	Description
TBD	TBD	TBD
Test Configuration	**Hardware:** t1pls02, t1sps02,t1ais01, t1acs02, t1drg01, t1ins01, t1ins02, t1icg01, t1acg01 **Servers:** PLANG, SDSRV, SBSRV, ADSRV, INGEST	

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7. Ingest 6A Data Type

Test Procedure No.: 6A10070	Ticket Version: TBD	Date Executed:	Test Conductor:
Title	Ingest 6A Data Type (Landsat 7 MOC Data Ingest and Archive)		
Objective	This test case verifies the ability to ingest Landsat 7 engineering data received from the Landsat 7 Missions Operations Center (MOC) via the electronic (Polling without Delivery Record) interface. A Landsat 7 engineering data file is produced daily to include data for a 24 hr period from 0Z to 2400Z and has the following file naming convention: L7YYYYdddENGDAT.Snn L7 identifies the mission, YYYY identifies the 4 digit year, ddd identifies the day of year (001 to 366). The year and day of year define when the file was created by the MOC. ENGDAT identifies the type of the data. Snn (nn = 01 to 99) is a sequence number which provides a unique identifier for each file sent in a day. The Landsat 7 MOC creates the Landsat 7 engineering data files and places them in the pre-specified polling directory on the MOC's server outside the MOC firewall. The Ingest MOC polling server will periodically poll this directory for new files. Ingest will ignore files that have already been ingested. Ingest will identify files detected in the MOC polling directory that do not conform to the naming convention for the Landsat 7 engineering data files as defined in the ICD, and will log those errors but will not ingest the files. The new files that are detected and conform to the file naming convention will be pulled via FTP to a staging directory at the ECS DAAC and will be preprocessed. Preprocessing includes extracting the year and day of year values from the data filename and creating a core metadata file. If any error are detected during preprocessing, the ingest process ends and the error will be logged. If no errors are detected during preprocessing the data and core metadata files are sent to the Data Server Subsystem (DSS) for insertion. The Landsat 7 engineering data files are archived and the core metadata files are used to update the SDSRV database. The following scenarios will be tested: Scenario 1: Successfully ingest and archive Landsat 7 engineering data. Scenario 2: MOC polling server ignores previously ingested Landsat 7 engineering data files. Scenario 3: MOC polling server identifies files not conforming to the Landsat 7 engineering data file naming convention. Scenario 4: Unsuccessfully ingest and archive Landsat 7 engineering data, resulting in an "Archive Error" being logged. Scenario 5: Unsuccessfully ingest and archive Landsat 7 engineering data, resulting in a "Metadata preprocessing error" being logged. Scenario 6: Unsuccessfully ingest and archive Landsat 7 engineering data, resulting in a "Resource allocation failure" being logged. Scenario 7: Successfully ingest and archive Landsat 7 engineering data, after a failure and recovery of the EcInGran Ingest server. Scenario 8: Successfully ingest and archive Landsat 7 engineering data, after a failure and recovery of the EcDsScienceDataServer SDSRV server. Scenario 9: Successfully ingest and archive Landsat 7 engineering data, after a failure and recovery of the EcDsStIngestFtpServer STMGT server.

				Criteria Mapping		
Ticket ID	**Criteria ID**	**Criteria Key**	**Criteria Type**	**Criteria Text**		**Test Steps**
RS_6A_06	10	TBD	FC	Demonstrate the ability to receive, archive and inventory Landsat 7 engineering data from the Landsat 7 MOC.		TBD
RS_6A_06	20	TBD	FC	Demonstrate the ability to construct the appropriate granule level metadata: RangeBeginningDate RangeBeginningTime RangeEndingDate RangeEndingTime for the file from the file name of the Landsat 7 engineering data file.		TBD
RS_6A_06	30	TBD	FC	Demonstrate that Ingest correctly ignores files remaining in the polling directory after the files have been ingested.		TBD
RS_6A_06	60	TBD	EC	Archive and Inventory Data error conditions - Data Archive Error		TBD
RS_6A_06	70	TBD	EC	Archive and Inventory Data error conditions - Metadata preprocessing error		TBD
RS_6A_06	80	TBD	EC	Archive and Inventory Data error conditions - Resource allocation failure		TBD
RS_6A_06	90	TBD	EC	Archive and Inventory Data error conditions - Detect filenames not in agreement with filenaming standard as defined in the ICD and log the error condition.		TBD
RS_6A_06	100	TBD	EC	Server Failure & Recovery during Ingest - Ingest Server		TBD
RS_6A_06	110	TBD	EC	Server Failure & Recovery during Ingest - Science Data Server		TBD
RS_6A_06	120	TBD	EC	Server Failure & Recovery during Ingest - Storage Management Server		TBD
				Test Information		

Test Input	• 3 L7MOCENG data files for ingest
	• 7 L7MOCENG data files (with erroneous filenames) for ingest
Test Output	• Ingest GUI Monitor/Control Display
	• Archive Directory Listings
	• SDSRV Database Queries
	• Viewing of the Granule Server Application Logs

Data Set Name	**Path Name**	**Description**
TBD	TBD	TBD

Test Configuration	• 6A baselined code
	• Servers (EcInGUI, EcInPolling, EcInReqMgr, EcInGran, EcDsStStagingDiskServer, EcDsStIngestFtpServer, EcDsScienceDataServer, EcDsStArchiveServer, EcIoAdServer)
	• Hardware (t1icg01, t1acg01, t1drg01, t1acs02, t1acs03, t1ins01)
	• Tools – Unix "tail" command

8. Distribution Compression

Test Procedure No.: 6A09040			Ticket Version: TBD		Date Executed:	Test Conductor:

Title	Compression and Distribution (gzip, compress)
Objective	This procedure exercises a new capability supported by ECS which allows the compression of data files in all distribution media types. Compression will be in either GZIP or UNIX Compressed format. This test verifies that the compression option is correctly processed by SDSRV, DDIST and STMGT when present in a distribution request and that the compression options are available on all order interfaces and are correctly passed to DDIST if chosen. Requests will be made for distribution of compressed files originating from all order interfaces, including EDG originated orders, GDS originated orders, Subscriptions, On-demand processing orders, ASTER E-mail parser and ECS DAAC-to-DAAC capabilities. Both GZIP and UNIX Compressed formats will be requested. Either electronic orders (FtpPush and FtpPull) and/or Media orders (8MM, CDRom, DLT, D3) will be requested, when appropriate. The DDIST GUI will be used to track orders and to verify updated information pertaining to compressed files. STMGT data base updates pertaining to compression, such as an ESDTs compression factor, will also be verified during this test. Large orders will be processed, where DDIST rejects the order if it will not fit on the requested media. This request is marked retryable and reassigned by the operator to a different media type or the compression factor is changed, and the request is resubmitted. Both scenarios will be verified in this test case. When compression is requested, both the packing list and the Distribution Notice are updated with information on the compression type, and instructions on how to uncompress the data. This will be verified for all orders requested during this test. It will also be verified that DDIST processes the next media on a priority basis. In addition, once compressed data is distributed, it will be FTPd (electronic distributions) or untarred (media distributions), uncompressed, and verified that the data compares with the original data. Each media type will be verified.

Criteria Mapping						
Ticket ID	**Critera ID**	**Criteria Key**	**Criteria Type**	**Criteria Text**		**Test Steps**
RS_6A_02			FC	Demonstrate successful distribution of data product orders in gzip compressed format for ftp-pull, ftp-push, and all supported physical media. Verify that the Distribution Notice indicates the compression type.		
RS_6A_02			FC	Demonstrate successful distribution of data product orders in Unix compressed format for ftp-pull, ftp-push, and all supported physical media. Verify that the Distribution Notice indicates the compression type.		
RS_6A_02			FC	Verify that the compression options are available via all order interfaces and are passed correctly to DDIST. This must be verified for the following interfaces: • EDG originated product orders, including Landsat media orders • GDS originated product orders • Subscriptions On-demand processing orders		

Test Information		
Test Input	• Acquire requests from various interfaces requesting distribution of compressed data	
	• Ingest requests to kickoff Subscriptions	
Test Output	• Compressed data files	
Metadata/Data Set Name	**Path Name**	**Description**
TBD	TBD	TBF
Test Configuration	• SDSRV, SBSRV, SDSRV GUI, STMGT GUI, CLS, INS, Ingest, DDIST, DDIST GUI, ADSRV • t1acs03, t1dps01, t1drg01, t1acg01, t1icg01, t1ins01, t1ins02 • EDG Client • L70RWRS, AST_EXP, MOD000, Other data types TBD	

9. EDOS Backup

Test Procedure No.: 6A09050	Ticket Version: TBD	Date Executed:	Test Conductor:

Title	EDOS Backup
Objective	The first objective of this test is to demonstrate the capability to restore L0 data that has failed on acquire by ingesting the data from backup D3 tape received from EDOS. The second objective of the test is to demonstrate the capability to provide backup data from the ECS archive on D3 tape to EDOS in the event that they would require backup data from our archive resources. Tapes containing EDOS backup data for use in this test will actually come from EDOS, or be simulated in-house. P
	A first instance, known as the storage management scenario, assumes that an acquire request for a specific PDS data file has failed. A D3 backup tape has been provided by EDOS containing the missing file. The test verifies that the specific PDS file can be untarred from the D3 tape and restored to the archive by copying it to the AMASS cache. The inventory is not updated in this case. The acquire is then completed successfully.
	A second instance, known as the ingest scenario, assumes that data has been received from EDOS missing two PDSs. A D3 backup tape is provided by EDOS containing the two missing PDSs. The tape is untarred and a special Backup Script is run to generate the two missing PDR and XFR files. The PDS files, PDRs and XFRs are then copied to the EDOS polling directory for ingest. A successful archive message is returned. A subsequent acquire is accomplished to demonstrate the accessibility of the data.
	Backup to EDOS is accomplished through two scenarios based on search and acquire by PDS ID and search and acquire by APID and observation period. The search and acquires are successfully accomplished. Both tapes have tar formatted data, and the Packing Lists and Medial Description Files are both in accordance with the EDOS/EGS ICD. In a real life scenario, the tapes would then be mailed to EDOS. All acquires will use the EDG Client.
	Other scripts provided by DSS will also be verified during this test, such as a STMGT script or GUI capability to place the D3 drive offline (and then back online), and one provided by SDSRV to map original file names to ECS unique file names. These scripts may be standalone, or embedded in others used to verify the EDOS backup capability. It should be noted that an AMASS D3 drive is used during EDOS backup capability verification, rather than the standalone D3 drive (not all sites have a standalone drive). In addition, general D3 distribution capabilities will be tested in this test case, such as device functions demonstrated through the STMGT GUI, monitoring of requests via the STMGT/DDIST GUIs, and attempting D3 distribution of a very large file.
	Error conditions attempted will include performing requests that use the archive servers when one of the drives is released to perform EDOS backup capabilities. It will be verified that any pending archive requests will be processed in turn, or when the drive is placed back online.

Criteria Mapping					
Ticket ID	**Criteria ID**	**Criteria Key**	**Criteria Type**	**Criteria Text**	**Test Steps**

RS_6A_03			FC	Delete or rename a single L0 PDS file present in the ECS archive. Verify an error is returned if the L0 PDS is ordered. Assume a request was made to EDOS for backup tape that has been provided for the PDS containing unreadable file. Using the STMGT procedure verify the following: • The data (PDS Physical Media Unit Delivery Record and PDS files) can be untarred from the tape. • The unreadable file can be restored by copying the specific file provided on the EDOS tape to AMASS cache Verify the PDS that contained the original missing file can be ordered through the EDG client and that original missing file is present in the distribution.	
RS_6A_03			FC	Simulate missing the receipt of two PDSs from EDOS. Perform a temporal search of the L0 ESDT covering the temporal coverage of the missing PDSs to insure they are not present in the search result set. Assume a request was made to EDOS for a backup tape that has been provided containing the 2 missing PDSs. Using the INGEST procedure verify the following: 1. The data (PDS Physical Media Unit Delivery Record and PDS files) can be untarred from the tape. 2. The missing PDSs can be recovered by: • copying the specific PDS data files provided on the EDOS tape to the Ingest EDOS polling directory and • Executing, for each PDS, the Backup Script that will generate the PDR and XFR files and copy them to the Ingest EDOS polling directory Verify the PDSs that were restored are in the results set of a temporal search of the L0 ESDT and can be ordered through the EDG client and that the PDS files are present in the distribution.	
RS_6A_03			FC	Assume a DEDS request has been received for 5 level 0 granules based on PDS ID. Using the V0 client, enter a search to identify the corresponding Level 0 granules, and then submit a single D3 order for the granules. Verify the following: • The data is formatted on the tape in tar format. • A Packing List is generated that is correct and meets the specification of the EDOS/EGS ICD • A Media Description File is generated and included on the tape that is correct and meets the specification of the EDOS/EGS ICD	
RS_6A_03			FC	Assume a DEDS request has been received for 5 level 0 granules based on an APID and an observation period. The request shall be such that at least two but no more than 5 granules are being requested. Using the V0 client, enter a search to identify the corresponding Level 0 granules, and then submit a single D3 order for the granules. Verify the following: • The data is formatted on the tape in tar format. • A Packing List is generated that is correct and meets the specification of the EDOS/EGS ICD A Media Description File is generated and included on the tape that is correct and meets the specification of the EDOS/EGS ICD	
Test Information					

Test Input	1) D3 backup tapes from EDOS (Actual or Simulated)
	2) EDG Client acquire of replaced/restored EDOS data
	3) Ingest EDOS Polling of replacement data
	4) EDG Client D3 acquire request for level 0 granules based on PDS ID
	5) EDG Client D3 acquire request for level 0 granules based on APID and observation period
Test Output	1) Successful archive and search of ingested PDS data or replaced files
	2) Successful acquire of replaced/restored EDOS data
	3) Successful D3 acquire of granules acquired based on PDS ID including a packing list and media description file
	4) Successful D3 acquire of granules acquired based on APID and observation period including a packing list and media description file

Data Set Name	Path Name	Description
TBD	TBD	TBD

Test Configuration	6) Standard PVC Configuration – All Servers Running to include STMGT GUI, DDIST GUI, EDG Client
	7) SDSRV, DDIST, STMGT, DMS (V0 to ECS Gateway)
	8) t1acs03, t1dps01, t1acg01, t1drg01, t1icg01, t1ins01, t1ins02
	Data available in archive: PDS L0 Data Products (specific ESDT TBD)

10. IGS Tape Ingest

Test Procedure No.: 6A09000	Ticket Version: TBD	Date Executed:	Test Conductor:
Title	IGS Tape Ingest (Landsat 7 IGS (Browse Data and Metadata) 8mm Ingest and Archive)		
Objective	This test case verifies the ability to ingest Landsat 7 (browse data and metadata) received from the Landsat 7 International Ground Stations (IGS's) on 8mm tape. The ECS will only serve as a catalog for the IGS metadata and archive for the IGS browse data. The metadata which accompanies the browse data on the 8mm tape may have been ingested earlier using the L7 IGS to ECS electronic interface (Polling interface). In this case the metadata that accompanies the browse data will replace the existing metadata in the Science Data Server (SDSRV) database. All metadata files will be of type Metadata0 (M0) which represents the combined Format 1 (F1) and Format 2 (F2) Landsat 7 data format.		
	To ingest data from 8mm tape, the tape is placed in the appropriate 8mm Tape Stacker device. The Media Ingest function on the Ingest GUI is then used to start the 8mm tape ingest process. The Physical Media Product Delivery Record (PMPDR) tar file is copied to a staging disk directory and untarred. The PMPDR is evaluated and if an error is detected a Physical Media Product Delivery Record Discrepancy (PMPDRD) is generated and sent to the IGS and the ingest process ends. The operator is notified of the results of the ingest operation. If no errors are detected in the PMPDR the ingest proceeds by copying all of the browse data and metadata files to the staging directory. Each Landsat 7 subinterval (1 metadata file and from 1 to 37 browse data files) is preprocessed. During preprocessing Ingest will verify that all expected files (identified in PMPDR) exist on the tape and then extract the appropriate core metadata. If an error is detected during preprocessing a Physical Media Production Acceptance Notification (PMPAN) is generated and sent to the IGS and the ingest process ends. If no errors are detected the subintervals are sent to the Data Server Subsystem (DSS) for insertion. The browse data files are archived and the metadata files are used to update the SDSRV database. At this time the SDSRV will compare the following metadata attributes of a subinterval being ingested from 8mm tape to existing subinterval metadata already in its' database when making the decision to replace or not to replace existing metadata: STATION_ID, STARTING_PATH and SUBINTERVAL_START_TIME. These metadata attributes must be identical for replacement to occur. After all subintervals have been successfully inserted a PMPAN is generated and sent to the IGS.		

Objective (cont'd)	The following scenarios will be tested:
	Scenario 1: Successfully ingest and archive Landsat 7 (browse data and metadata) from 8mm tape with metadata replacement.
	Scenario 2: Successfully ingest and archive Landsat 7 (browse data and metadata) from 8mm tape without metadata replacement.
	Scenario 3: Unsuccessfully ingest and archive Landsat 7 (browse data and metadata) from 8mm tape, resulting in an "Archive Error" being reported in the PMPAN.
	Scenario 4: Unsuccessfully ingest and archive Landsat 7 (browse data and metadata) from 8mm tape, resulting in a "Post-transfer File Size check failure" being reported in the PMPAN.
	Scenario 5: Unsuccessfully ingest and archive Landsat 7 (browse data and metadata) from 8mm tape, resulting in a "Metadata preprocesing error" being reported in the PMPAN.
	Scenario 6: Unsuccessfully ingest and archive Landsat 7 (browse data and metadata) from 8mm tape, resulting in an "Incorrect Number of Metadata Files" being reported in the PMPAN.
	Scenario 7: Unsuccessfully ingest and archive Landsat 7 (browse data and metadata) from 8mm tape, resulting in an "All File Groups/Files not found" being reported in the PMPAN.
	Scenario 8: Successfully ingest and archive Landsat 7 (browse data and metadata) from 8mm tape, after a failure and recovery of the EcInGran Ingest server.
	Scenario 9: Successfully ingest and archive Landsat 7 (browse data and metadata) from 8mm tape, after a failure and recovery of the EcDsScienceDataServer SDSRV server.
	Scenario 10: Successfully ingest and archive Landsat 7 (browse data and metadata) from 8mm tape, after a failure and recovery of the EcDsStArchiveServer STMGT server.

Criteria Mapping

Ticket ID	Criteria ID	Criteria Key	Criteria Type	Criteria Text	Test Steps
EN_6A_01	1684	TBD	FC	Archive & inventory IGS Metadata (M0 format) / Browse tape data from 8 mm tape.	TBD
EN_6A_01	1685	TBD	FC	Demonstrate the ability to insert metadata and browse for the case in which the metadata has been previously inserted, so that the existing metadata is replaced with the metadata accompanying the browse file.	TBD
EN_6A_01	1686	TBD	PC	Demonstrate the capability to ingest 60 Gbytes of metadata/browse data included on 16 different tapes once per month.	TBD
EN_6A_01	1687	TBD	EC	Archive & inventory IGS Metadata / Browse tape data error conditions - Data Archive Error	TBD
EN_6A_01	1688	TBD	EC	Archive & inventory IGS Metadata / Browse tape data error conditions - Post-transfer File size check failure	TBD
EN_6A_01	1689	TBD	EC	Archive & inventory IGS Metadata / Browse tape data error conditions - Metadata preprocessing error	TBD
EN_6A_01	1690	TBD	EC	Archive & inventory IGS Metadata / Browse tape data error conditions - Incorrect Number of Browse or Metadata Files	TBD

EN_6A_01	1691	TBD	EC	Archive & inventory IGS Metadata / Browse tape data error conditions - All File Groups/Files not found	TBD
EN_6A_01	1692	TBD	EC	Server Failure & Recovery during Ingest - Ingest Server	TBD
EN_6A_01	1693	TBD	EC	Server Failure & Recovery during Ingest - Science Data Server	TBD
EN_6A_01	1694	TBD	EC	Server Failure & Recovery during Ingest - Storage Management Server	TBD

Test Information					

Test Input	• 1 PDR for ingest, containing 2 granules of L7IGS data (metadata only)
	• 2 8mm tapes for ingest, each containing 2 granules of L7IGS data (browse and metadata) and a PMPDR
	• 1 8mm tapes for ingest, each containing 1 granule of L7IGS data (browse and metadata) and a PMPDR
	• 3 8mm tapes for ingest, each containing 1 granule of L7IGS data (browse and metadata) and a bad PMPDR
	• 1 8mm tape for ingest, containing 1 bad granule of L7IGS data (browse and bad metadata) and a PMPDR
Test Output	• Ingest GUI Monitor/Control Display
	• Archive Directory Listings
	• SDSRV Database Queries
	• PMPAN messages

Data Set Name	Path Name	Description
TBD	TBD	TBD

Test Configuration	• 6A baselined code
	• Servers (EcInGUI, EcInPolling, EcInReqMgr, EcInGran, EcDsStStagingDiskServer, EcDsStIngestFtpServer, EcDsSt8MMServer, EcDsScienceDataServer, EcDsStArchiveServer, EcIoAdServer)
	• Hardware (t1icg01, t1acg01, t1drg01, t1dps01, t1acs02, t1acs03, t1ins01)
	• Tools – Netscape E-mail

11. Multi-host Scheduling

Test Procedure No.: 6A10030	Ticket Version: TBD			Date Executed:	Test Conductor:

Title	Multi-Host Scheduling (of Media Ingest & Distribution)
Objective	The objective of this test is to demonstrate the capability of the system to support multiple host (2) configurations of hard media devices and electronic media (FTP Push). Operations will be concurrent between hosts using the same media devices for 8mm, DLT, CD-ROM, and FTP Push. The STMGT GUI and DDIST GUI will be used to monitor media progress and devices. 8mm device functions will be demonstrated through the Storage Management GUI for such functions as mount and dismount, and taking the device on and off-line without disturbing the actual server, and for mounting requests and devices. Server functions will be demonstrated through HP Openview to show that multiple instances of the 8mm, FTP Push, and FTP Pull servers can be started , shutdown, and monitored independently. This includes the capability of the servers to coexist in multiple modes on the same platform and 8mm devices transferred from an 8mm server on one mode to a device manager in another mode. Warm and cold restart capability will be demonstrated for each of the servers. Finally, error handling capabilities will be demonstrated for recovery of a distribution request based on a retriable device error for each media type. Fail-over of platforms will be tested for server functionality by reassigning media to a new platform and accomplishing an acquire. **Note: Additional Media Type Test (RS_6A_01) must be executed before this test is executed.** **Note: This test must be executed in the PVC and will require two modes.**

Criteria Mapping					
Ticket ID	Critera ID	Criteria Key	Criteria Type	Criteria Text	Test Steps
RS_6A_04	10		FC	Submit a sufficient number of media orders to engage all media devices. Demonstrate the scheduling of concurrent media orders to devices supporting the same media type, but that are attached to different hosts. This test needs to cover the following ECS media types: • 8mm • DLT • CD-ROM • FTP Push	
RS_6A_04	20		FC	Demonstrate the device management functions for 8mm tape (mount, un-mount, taking device off-line / on-line). [Note: Regression test -- Device management functions for CD-ROM and DLT are covered in RS_6A_01]	
RS_6A_04	30		FC	Monitor the progress of FTP Push operations via the STMGT GUI.	
RS_6A_04	40		FC	Demonstrate the correct operation of STMGT GUI functions for monitoring requests and devices. [Note: Regression test]	

RS_6A_04	50		FC	Demonstrate the start-up, monitoring via HP/OV, and shut-down of the 8mm, FTP Push and FTP Pull servers. Verify that the multiple instances of each device manager are correctly identified on the HP/OV monitoring display and can be shut-down independently. [Note: Regression test -- the same functions for CD-ROM and DLT are covered in RS_6A_01]	
RS_6A_04	60		FC	Demonstrate that instances of the 8mm server and ftp push server can co-exist in multiple modes on the same platform. Verify that 8mm devices can be transferred from a 8mm server in one mode to the device manager on the same platform, but operating in a different mode. [Note: Regression test -- the same functions for CD-ROM and DLT are covered in RS_6A_01]	
RS_6A_04	70		EC	Demonstrate warm and cold restart for the 8mm, FTP Push and FTP Pull servers. Demonstrate the recovery of a distribution request affected by a retriable fault in any of these servers. [Note: Regression test -- the same functions for CD-ROM and DLT are covered in RS_6A_01]	
RS_6A_04	80		EC	Demonstrate error handling for and recovery from 8mm device and media errors. Demonstrate the recovery of a distribution request affected by a retriable 8mm device error. [Note: Regression test -- the same functions for CD-ROM and DLT are covered in RS_6A_01]	
RS_6A_04	90		EC	Demonstrate error handling for and recovery from FTP Push errors. Demonstrate the recovery of a distribution request affected by a retriable FTP Push error. [Note: Regression test -- the same functions for CD-ROM and DLT are covered in RS_6A_01].	
RS_6A_04	100		EC	Demonstrate error handling for and recovery from FTP Pull errors. Demonstrate the recovery of a distribution request affected by a retriable FTP Pull error. [Note: Regression test -- the same functions for CD-ROM and DLT are covered in RS_6A_01].	
RS_6A_04	110		EC	Demonstrate fail-over for media devices: Bring down one of the Distribution platforms and attach its 8mm, DLT, and CD-ROM devices to the other platform. Bring up the associated ECS servers for each device and demonstrate resumption of the distribution function and the use of the devices newly attached to this platform.	
Test Information					

Test Input	6) Media election and acquire requests
	7) STMGT GUI requests and device status requests
	8) STMGT GUI change device requests
Test Output	6) CD-ROM concurrent data acquires from different hosts successfully written to disk
	7) DLT concurrent data acquires from different hosts successfully written to tape
	8) 8mm concurrent data acquires from different hosts and modes successfully written to tape
	9) FTP Push concurrent data acquires from different hosts and modes
	10) 8mm device management functions via the Storage Management GUI
	11) 8mm startup, shutdown, and monitoring via the HP/OV
	12) FTP Push startup, shutdown, and monitoring via the HP/OV
	13) FTP Pull startup, shutdown, and monitoring via the HP/OV
	14) 8mm device error output as reported by server logs and DDIST GUI
	15) FTP Pull and FTP Push error handling and recovery as reported by server logs and DDIST GUI
	16) Fail over and resumption of 8mm, DLT, and CD-ROM functions from one distribution platform to another during a distribution function

Data Set Name	Path Name	Description
TBD	TBD	TBD

Test Configuration	9) Standard PVC Configuration – All Servers Running to include STMGT GUI, DDIST GUI, EDG Client
	10) 2 Modes will be required
	11) 2 Media hosts will be required
	12) SDSRV, DDIST, STMGT, DMS (V0 to ECS Gateway), CLS
	13) p0acs03, p0wkg01, p0dis01, p0acg01, p0drg01, p0dis02
	14) Data available in archive: AST_L1A and AST_L1B, Landsat 7 Calibration Data (L7CPF)

12. Reprocessing

Test Procedure No.: 6A09020	Ticket Version: <RM_6A_01B>		Date Executed:	Test Conductor:
Title	Reprocessing			
Objective	Reprocessing supports the regeneration of products that have been previously produced and archived. The upgraded products will be archived in addition to the versions that were previously archived. There are two concepts associated with reprocessing. The first concept is when a product has been produced from a PGE that has been run in the past and for some unspecified reason, the PGE needs to be run again to reproduce the same exact outputs. The second concept is when a PGE has been run in the past over a given time period or set of data and the PGE has been improved (software or static inputs) by the IT. Reprocessing provides the capability to run that new PGE over the same time period/data set. This test focuses on the second concept of Reprocessing which supports updates of PGE software, regeneration of DPRs, data versioning, routine processing and the ability to maintain independent queues for processing and reprocessing DPR types created via planning.

This test will do the following:
• Demonstrate that the existing data granules can be reprocessed while at the same time supporting first time processing of new data granules using the same PGE.
• Demonstrate that out of the reprocessing DPRs that are ready to run, DPS can limit the number of reprocessing DPRs allowed to run at a time by an operator configurable number of reprocessing DPRs.
• Demonstrate that DPS reserves an operator configurable number of reprocessing DPRs and routine processing DPRs to be executed at a time.
• Demonstrate that the DPS will allow the operator to reconfigure the numbers of reprocessing and first time processing jobs that are allowed in the system by updating the correct parameters and restarting the processing system components.
• Demonstrate that the DPS will support reprocessing for which the updated PGE can either add granules to the data collection (ESDT) used by the original processing job, or the updated PGE can add granules to a new version of the data collection.
• Demonstrate that the output products stored under both the new and old versions of the data collection are accessible.

To Reprocess DPRs, the updated PGE will be registered through SSIT and stored in the PDPS database. Once the PLS retrieves the input data granules from the PDPS database, the SDSRV will be queried for the most up to date data. The predicted output data will then be stored in the PDPS database as the new version of that PGE. The DPRs will be selected for Reprocessing via the Production Request Editor and each DPR job will be placed in an independent reprocessing queue. DPRs will be dispatched for processing from either queue against the appropriate slot as a job of that type finishes and the data becomes available. | | | |
| **Criteria Mapping** | | | | |

Ticket ID	Criteria ID	Criteria Key	Criteria Type	Criteria Text	Test Steps
RM_6A_01	10	TBD	FC	Show that the reprocessing of existing data granules can occur while at the same time supporting first time processing of new data granules using the same PGE.	

RM_6A_01	20	TBD	FC	Show that the processing system can limit the number of reprocessing DPRs that are allowed to run at a time (from those reprocessing DPRs that are ready to run) to a operator configurable number of reprocessing DPRs.	
RM_6A_01	30	TBD	FC	Show that the processing system reserves an operator configurable number of reprocessing DPRs and an operator configurable number of routine processing DPRs to be executed at a time.	
RM_6A_01	40	TBD	FC	Show that the processing system will allow the operator to reconfigure the numbers of reprocessing and first time processing jobs that are allowed in the system by updating the correct parameters and restarting the processing system components.	
RM_6A_01	50	TBD	FC	Show that the processing system will support reprocessing for which the updated PGE can either add granules to the data collection (ESDT) used by the original processing job, or the updated PGE can add granules to a new version of the data collection.	
RM_6A_01	60	TBD	FC	Run a PGE causing granules to be inserted under the data collection (ESDT) for output products associated with that PGE. Simulate a PGE update where the output product is now output to a new version of the previously referenced data collection. Run the updated PGE and insert granules to the new version of the data collection. Demonstrate that the output products stored under both the new and old versions of the data collection are accessible.	

Test Information					

Test Input	• ASTER L1 Data Sets, Synthetic ASTER PGEs		
Test Output	• ASTER Higher Level Products		

Metadata/Data Set Name	Path Name	Description
TBD	TBD	TBF

Test Configuration	**Hardware:** t1pls02, t1sps02, t1spg01, t1ais01, t1acs02, t1drg01, t1ins01, t1ins02
	Servers: PRONG, PLANG, SDSRV, SBSRV, ADSRV

13. Archive Improvements

Test Procedure No: 6A10040	Ticket Version: TBD	Date Executed:	Test Conductor:

Title	Archive Improvements
Objective	This test case verifies improvements made to ECS archive processing. Improvements made in the 6A timeframe include Data Access and Staging Activity Logging, Parallel AMASS I/O and Logical Archive ID. Data Access and Staging Activity logs record archive activity processing and save this information in the stmgt db. SQL commands can be used to recover this information from the db. Parallel AMASS I/O includes changing the method in which files are presented to the archive. All files in a request are written to/from the archive in parallel rather than one file at a time, as was done previous to 6A code. There is a configurable number of parallel I/Os that represent the maximum number of I/Os that can be performed at one time. If this number is reached, those requests over the maximum will be placed on a queue and processed in turn. Logical Archive ID allows data to be archived at multiple archive sites over time and still have all of the data available for retrieval. This is the final installment of software upgrades that complete the separation of the physical location of data in the archive from the logical location of the data kept in the inventory. This test will add a new ESDT to verify that no archive location specification is necessary when adding ESDTs from the Science Data Server GUI. Data will be ingested and acquired for ESDTs that store their data in different archives. Data will be stored on and retrieved from both primary and backup archives for a given ESDT. The archive location will be changed for a given ESDT, and data stored on and retrieved from both the old and new locations. Multiple acquires will be requested to verify archive queuing capabilities. At the same time a number of PDPS processing jobs and Ingest requests will also be performed to further verify queuing, concurrent archive processing and priority processing. The STMGT GUI will be used to display and monitor queued and active requests. Log files will be examined to verify correct archive messaging, and to track acquire requests from start to finish. This test will be executed in the PVC since multiple AMASS archives are desirable. Server functions will be demonstrated through HP Openview to show that multiple instances for the Archive servers can be started, shutdown, and monitored independently. This includes warm and cold starts and recovery of archive operations interrupted by recoverable (communication or nfs timeout or AMASS down) and irrecoverable (UNIX security violation or missing file) errors. It will be demonstrated that recoverable errors return 'retriable' errors, and irrecoverable errors return 'fatal' errors. HPOV will also be used to demonstrate warm and cold start of the SDSRV and DDIST servers and of the STMGT Request Manager.

Criteria Mapping					
Ticket ID	Critera ID	Criteria Key	Criteria Type	Criteria Text	Test Steps
RS_6A_05	10		FC	Demonstrate successful archiving and retrieval of data products belonging to ESDT that are allocated to different archives. [Note: Regression testing]. Verify that files for a multi-file granule are processed concurrently.	
RS_6A_05	20		FC	Demonstrate archive back-up functions and use of back-up copies. [Note: Regression testing]. Verify that back-up to a different archive server does not block a thread in the primary archive server.	

RS_6A_05	30		FC	Demonstrate changing the archive allocation of an ESDT. Demonstrate that newly inserted granules are archived in the new archive location, while existing granules can be retrieved from the old archive location.	
RS_6A_05	40		FC	Submit a sufficiently high number of product orders to cause queuing (the number of orders that is needed for this will depend on the number of files that the archive servers are configured to read concurrently). The orders must include multi-file granules. Concurrently, cause staging requests to be submitted by processing jobs and ingest requests to be submitted. Verify the following: • Requests are processed concurrently as long as there are archive server threads available to handle them • Requests are queued for the archive server if their number exceeds the number of concurrent requests that the servers can handle • Requests are processed in priority order • The STMGT GUI can be used to display the queued requests and the progress of archive copy operations • Log entries are written as specified in the L4 requirements The log entries contain sufficient information to permit entries for the same distribution request to be correlated.	
RS_6A_05	50		FC	Dismount an archive tape/Volume Group used for back-up copies via the AMASS Off Line File System (OLFS). Demonstrate that the tape will be requested if the back-up copy is needed. Mount the tape/Volume Group and demonstrate that the back-up copy is now available for retrieval. [Note: Regression testing].	
RS_6A_05	60		FC	Demonstrate the start-up, monitoring via HP/OV, and shut-down of the archive servers. Verify that the multiple instances of each archive server are correctly identified on the HP/OV monitoring display and can be shut-down independently. [Note: Regression test	
RS_6A_05	70		EC	Demonstrate the handling of recoverable and irrecoverable errors that occur during archive copy operations. An example of a recoverable error is a communication/nfs timeout, or AMASS being down. Examples of irrecoverable errors are a Unix security violation, or a missing file. Recoverable errors must return errors classified as retriable; irrecoverable errors must return errors classified as fatal.	
RS_6A_05	80		EC	Demonstrate warm and cold start of DDIST and SDSRV. Cold start should clean up any resources and threads used on behalf of the cold-started server; warm start should result in the server correctly reconnecting with its previously submitted STMGT requests.	
RS_6A_05	90		EC	Demonstrate warm and cold start of STMGT Archive Server and STMGT Request Manager.	
Test Information					

Test Input	➢ Archive store requests originated from INGEST or PDPS
	➢ Archive retrieval requests originated from PDPS or the EDG Client
	➢ Query Requests originated from the EDG Client:
	➢ Add ESDT Request originated from the SDSRV GUI
	➢ Dismount/Mount of archive tape/volume group
Test Output	➢ Correct storage of data in the archive
	➢ Correct retrieval of data from the archive
	➢ SDSRV Inventory Database query results
	➢ Data staged to the requested Push or Pull destinations
	➢ ESDT added as expected
	➢ Correct archive messaging written to the logs

Metadata/Data Set Name	Path Name	Description
TBD	TBD	TBF

Test Configuration	➢ EcSbSubServer, EcDsScienceDataServer, EcDsDistributionServer, EcDsStPullMonitorServer, EcDsStArchiveServer, EcDsStStagingDiskServer EcDsStStagingMonitorServer, EcClDtUserProfileGateway, EcPlSubMgr, EcDpPrJobMgmt,EcDpPrDeletion,EcIoAdServer, EcDsStFtpDisServer, EcDsStIngestFtpServer, EcInPolling, EcInReqMgr, EcInGran, EcCsEmailParser,
	➢ t1ins02, t1acs03, t1dps01, t1acg01, t1drg01, t1ins01, t1pls01, t1ais03, t1pls02, t1sps02, t1spg01, t1ais01
	➢ EDG Client
	➢ ESDT: TBD

14. Ingest Database Data Type Verification

Test Procedure No.: 6A10080	Ticket Version: TBD	Date Executed:	Test Conductor:
Title	Ingest Database Data Type Verification		
Objective	This test case shows that the Ingest database contains the necessary 6A data type information. The following database parameters will be checked: DataType, VersionID and FileTypeTemplateKey. ISQL commands will be used to query the InDataTypeTemplate table of the Ingest Database. The Database parameter values returned by the queries will be compared to information provided in the appropriate ICD. It should be noted that this test case does not involve ingest of any data.		

Criteria Mapping					
Ticket ID	**Criteria ID**	**Criteria Key**	**Criteria Type**	**Criteria Text**	**Test Steps**

RS_6A_06	40	TBD	FC	Inspect the INS database to confirm that all the data types listed for 6A for the following interfaces have the correct entry information:
				       a) GLAS
				       b) EMOS History Files
				
				For GLAS data types, Compare SIPS ICD to check DataType, VersionID and FileTypeTemplateKey in InDataTypeTemplate table. FileTypeTemplateKey should be "SIPS" if provider is required to provide InputPointer in metadata otherwise it should be "NON_STD_ SIPS".
				
				For EMOS History Files, check DataType in InDataTypeTemplate table against EMOS ICD
					TBD

Test Information			
Test Input	• ISQL commands applied to the InDataTypeTemplate table in the Ingest Database • "ICD between ECS and TBD" (Document number TBD) • "ICD between ECS and SIPS Volume TBD" (Document number 423-41-57-TBD)		
Test Output	• Ingest Database query results		

EMOS HISTORY DATA			
Data Type	**Data Type**	**Data Type**	**Data Type**
TBD	TBD	TBD	TBD

SIPS GLAS DATA					
Data Type	**Version ID**	**FileTypeTemplateKey**	**Data Type**	**Version ID**	**FileTypeTemplateKey**
TBD	TBD	TBD	TBD	TBD	TBD
Test Configuration	6A baselined code and 6A baselined Ingest Database - Sybase - Hardware (t1icg01)				

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Appendix B. Primavera Schedule Listing

The Primavera (P3) Schedule for the Release 6A Test Program is attached

ECS Project — 6A Test Schedule

Activity ID	Activity Description	Schedule
	6A Drop 6A	
SVMGT6A025	Develop Test Plan Draft (DID 409)	29NOV99A – 28JAN00A
SVMGT6A030	Review 6A Tickets	08DEC99A – 11FEB00
SVACT6A200	Planning of 6A Test Procedures	10DEC99A – 06MAR00
SVACT6A800	Update Test Summaries	10JAN00A – 13MAR00
SVMGT6A080	Update Test Plan to Final(DID 409)	01FEB00 – 13MAR00
SVACT6A210	Develop Draft 6A Test Procedures	14MAR00 – 16JUN00
SVMGT6A250	Procedure Internal Review	06APR00 – 07JUL00
SVACT6A220	ESDIS Test Procedure Review & Approval	25APR00 – 24JUL00
SVMGT6A110	VATC Release 6A Install & Checkout (2 modes)	17JUL00 – 01AUG00
SVMGT6A510	6A TRR (B/L at 8/3/00)	03AUG00*
SVACT6A230	Release 6A Dry Runs	04AUG00 – 25SEP00
SVACT6A240	Formal 6A Acceptance Tests	17AUG00 – 27SEP00
SVMGT6A300	6A CSR (B/L at 12/15/00)	22JAN01*
SVMGT6A240	6A Site testing	23APR01 23JAN01
SVMGT6A245	DID 412 Test Report (30 days after Final SRA)	11MAY01 02APR01
SVMGT6A900	Drop 6A Complete (SV tie off)	11MAY01
SVACT6A070	6A09030 Additional Media Types - Plan	12JAN00A – 14JAN00A
SVACT6A080	6A09030 Additional Media Types - Update Summary	18JAN00A – 23FEB00A
SVACT6A160	6A09030 Additional Media Types - Dev Draft	14MAR00 – 05APR00
SVACT6A900	6A09030 Additional Media Types - Internal Rev	06APR00 – 24APR00
SVACT6A170	6A09030 Additional Media Types - ESDIS Rev	25APR00 – 09MAY00
SVACT6A180	6A09030 Additional Media Types - Dry Run	04AUG00 – 16AUG00
SVACT6A190	6A09030 Additional Media Types - Formal	17AUG00 – 18AUG00
SVACT6A300	6A10000 VO Gateway Enhance - Plan	10DEC99A – 07JAN00A
SVACT6A820	6A10000 VO Gateway Enhance - Update Summary	28JAN00A – 31JAN00
SVACT6A310	6A10000 VO Gateway Enhance - Dev Draft	14MAR00 – 05APR00
SVACT6A920	6A10000 VO Gateway Enhance - Internal Rev	06APR00 – 24APR00
SVACT6A320	6A10000 VO Gateway Enhance - ESDIS Rev	25APR00 – 09MAY00
SVACT6A330	6A10000 VO Gateway Enhance - Dry Run	04AUG00 – 16AUG00
SVACT6A340	6A10000 VO Gateway Enhance - Formal	17AUG00 – 18AUG00
SVACT6A400	6A10020 Granule Deletion - Plan	04JAN00A – 17JAN00A
SVACT6A840	6A10020 Granule Deletion - Update Summary	28JAN00A – 31JAN00
SVACT6A410	6A10020 Granule Deletion - Dev Draft	14MAR00 – 05APR00
SVACT6A940	6A10020 Granule Deletion - Internal Rev	06APR00 – 24APR00
SVACT6A420	6A10020 Granule Deletion - ESDIS Rev	25APR00 – 09MAY00
SVACT6A430	6A10020 Granule Deletion - Dry Run	04AUG00 – 16AUG00
SVACT6A440	6A10020 Granule Deletion - Formal	17AUG00 – 18AUG00
SVACT6A750	6A08000 Machine-to-Machine Gateway - Plan	10DEC99A – 12JAN00A
SVACT6A755	6A08000 Machine-to-Machine Gateway - Update Summ	18JAN00A – 25JAN00A

Timeline header: 1999 (SEP OCT NOV DEC) | 2000 (JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC) | 2001 (JAN FEB MAR APR MAY)

ProjectStart	01SEP97	Early Bar
ProjectFinish	03AUG01	Progress Bar
Data Date	28JAN00	Critical Activity
Run Date	28JAN00	

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Activity ID	Activity Description	Schedule (1999–2001)
SVACT6A760	6A08000 Machine-to-Machine Gateway - Dev Draft	14MAR00 – 19MAY00
SVACT6A765	6A08000 Machine-to-Machine Gateway - Internl Rev	22MAY00 – 08JUN00
SVACT6A770	6A08000 Machine-to-Machine Gateway - ESDIS Rev	09JUN00 – 23JUN00
SVACT6A780	6A08000 Machine-to-Machine Gateway - Dry Run	04AUG00 – 16AUG00
SVACT6A790	6A08000 Machine-to-Machine Gateway - Formal	17AUG00 – 18AUG00
SVACT6A550	6A10050 ftp Pull Subscriptions - Plan	10DEC99A – 17JAN00
SVACT6A552	6A10050 ftp Pull Subscriptions - Update Summary	18JAN00A – 31JAN00
SVACT6A560	6A10050 ftp Pull Subscriptions - Dev Draft	14MAR00 – 24APR00
SVACT6A970	6A10050 ftp Pull Subscriptions - Internal Review	25APR00 – 11MAY00
SVACT6A570	6A10050 ftp Pull Subscriptions - ESDIS Rev	12MAY00 – 26MAY00
SVACT6A580	6A10050 ftp Pull Subscriptions - Dry Run	04AUG00 – 16AUG00
SVACT6A590	6A10050 ftp Pull Subscriptions - Formal	17AUG00 – 18AUG00
SVACT6A174	6A09080 Attached DPR - Plan	11JAN00A – 17JAN00
SVACT6A173	6A09080 Attached DPR - Update Summary	18JAN00A – 24JAN00A
SVACT6A175	6A09080 Attached DPR - Dev Draft	14MAR00 – 05APR00
SVACT6A176	6A09080 Attached DPR - Internal Rev	06APR00 – 24APR00
SVACT6A177	6A09080 Attached DPR - ESDIS Rev	25APR00 – 09MAY00
SVACT6A178	6A09080 Attached DPR - Dry Run	04AUG00 – 16AUG00
SVACT6A179	6A09080 Attached DPR - Formal	17AUG00 – 18AUG00
SVACT6A164	6A10070 Ingest 6A Data Type - Plan	04JAN00A – 10JAN00A
SVACT6A163	6A10070 Ingest 6A Data Type - Update Summary	11JAN00A – 17JAN00A
SVACT6A165	6A10070 Ingest 6A Data Type - Dev Draft	01MAY00 – 23MAY00
SVACT6A166	6A10070 Ingest 6A Data Type - Internal Rev	24MAY00 – 12JUN00
SVACT6A167	6A10070 Ingest 6A Data Type - ESDIS Rev	13JUN00 – 27JUN00
SVACT6A168	6A10070 Ingest 6A Data Type - Dry Run	30AUG00 – 12SEP00
SVACT6A169	6A10070 Ingest 6A Data Type - Formal	13SEP00 – 14SEP00
SVACT6A250	6A09040 Distribution Compression - Plan	04JAN00A – 17JAN00
SVACT6A810	6A09040 Distribution Compression - Update Summar	28JAN00A – 31JAN00
SVACT6A260	6A09040 Distribution Compression - Dev Draft	06APR00 – 28APR00
SVACT6A910	6A09040 Distribution Compression - Internal Rev	01MAY00 – 17MAY00
SVACT6A270	6A09040 Distribution Compression - ESDIS Rev	18MAY00 – 02JUN00
SVACT6A280	6A09040 Distribution Compression - Dry Run	17AUG00 – 29AUG00
SVACT6A290	6A09040 Distribution Compression - Formal	30AUG00 – 31AUG00
SVACT6A600	6A09050 EDOS Backup - Plan	04JAN00A – 17JAN00
SVACT6A605	6A09050 EDOS Backup - Update Summary	28JAN00A – 31JAN00
SVACT6A610	6A09050 EDOS Backup - Dev Draft	14MAR00 – 05APR00
SVACT6A980	6A09050 EDOS Backup - Internal Review	06APR00 – 24APR00
SVACT6A620	6A09050 EDOS Backup - ESDIS Rev	25APR00 – 09MAY00
SVACT6A630	6A09050 EDOS Backup - Dry Run	04AUG00 – 16AUG00
SVACT6A640	6A09050 EDOS Backup - Formal	17AUG00 – 18AUG00

ProjectStart	01SEP97	Early Bar
ProjectFinish	03AUG01	ProgressBar
Data Date	28JAN00	CriticalActivity
Run Date	28JAN00	

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6A Test Schedule

Activity ID	Activity Description	1999	2000	2001
		SEP OCT NOV DEC	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC	JAN FEB MAR APR MAY
SVACT6A450	6A09000 IGS Tape Ingest - Plan		10JAN00A ▮ 10JAN00A	
SVACT6A452	6A09000 IGS Tape Ingest - Update Summary		11JAN00A ▮ 11JAN00A	
SVACT6A460	6A09000 IGS Tape Ingest - Dev Draft		14MAR00 ▭ 05APR00	
SVACT6A950	6A09000 IGS Tape Ingest - Internal Review		06APR00 ▭ 24APR00	
SVACT6A470	6A09000 IGS Tape Ingest - ESDIS Review		25APR00 ▭ 09MAY00	
SVACT6A480	6A09000 IGS Tape Ingest - Dry Run		04AUG00 ▭ 16AUG00	
SVACT6A490	6A09000 IGS Tape Ingest - Formal		17AUG00 ▽ 18AUG00	
SVACT6A650	6A10030 Multi-host Scheduling - Plan		04JAN00A ▮ 14JAN00A	
SVACT6A655	6A10030 Multi-host Scheduling - Update Summary		17JAN00A ▽ 21JAN00A	
SVACT6A660	6A10030 Multi-host Scheduling - Dev Draft		01MAY00 ▭ 23MAY00	
SVACT6A990	6A10030 Multi-host Scheduling - Internal Review		24MAY00 ▭ 12JUN00	
SVACT6A670	6A10030 Multi-host Scheduling - ESDIS Rev		13JUN00 ▭ 27JUN00	
SVACT6A680	6A10030 Multi-host Scheduling - Dry Run		30AUG00 ▭ 12SEP00	
SVACT6A690	6A10030 Multi-host Scheduling - Formal		13SEP00 ▽ 14SEP00	
SVACT6A500	6A09020 Reprocessing - Plan	13DEC99A ▮ 04JAN00A		
SVACT6A505	6A09020 Reprocessing - Update Summary		10JAN00A ▮ 14JAN00A	
SVACT6A510	6A09020 Reprocessing - Dev Draft		14MAR00 ▽ 05APR00	
SVACT6A960	6A09020 Reprocessing - Internal Review		06APR00 ▽ 24APR00	
SVACT6A520	6A09020 Reprocessing - ESDIS Rev		25APR00 ▽ 09MAY00	
SVACT6A530	6A09020 Reprocessing - Dry Run		04AUG00 ▽ 16AUG00	
SVACT6A540	6A09020 Reprocessing - Formal		17AUG00 ▽ 18AUG00	
SVACT6A110	Review RS6A05 Archive Improvements Ticket	08DEC99A ▮ 15DEC99A		
SVACT6A850	6A10040 Archive Improvements - Plan		12JAN00A ▮ 18JAN00A	
SVACT6A855	6A10040 Archive Improvements - Update Summary		19JAN00A ▮ 25JAN00A	
SVACT6A860	6A10040 Archive Improvements - Dev Draft		24MAY00 ▭ 16JUN00	
SVACT6A865	6A10040 Archive Improvements - Internal Rev		19JUN00 ▭ 07JUL00	
SVACT6A870	6A10040 Archive Improvements - ESDIS Rev		10JUL00 ▭ 24JUL00	
SVACT6A880	6A10040 Archive Improvements - Dry Run		13SEP00 ▭ 25SEP00	
SVACT6A890	6A10040 Archive Improvements - Formal		26SEP00 ▽ 27SEP00	
SVACT6A181	6A10080 Ingest db Data Type Verif. - Plan		12JAN00A ▮ 12JAN00A	
SVACT6A183	6A10080 Ingest db Data Type Ver - Update Summary		13JAN00A ▮ 13JAN00A	
SVACT6A185	6A10080 Ingest db Data Type Verif. - Dev Draft		14MAR00 ▭ 05APR00	
SVACT6A187	6A10080 Ingest db Data Type Verif - Internal Rev		06APR00 ▭ 24APR00	
SVACT6A189	6A10080 Ingest db Data Type Verif. - ESDIS Rev		25APR00 ▭ 09MAY00	
SVACT6A191	6A10080 Ingest db Data Type Verif. - Dry Run		04AUG00 ▭ 16AUG00	
SVACT6A193	6A10080 Ingest db Data Type Verif. - Formal		17AUG00 ▽ 18AUG00	

ProjectStart	01SEP97	◁▬▬▷ Early Bar	ECSP:SVER
ProjectFinish	03AUG01	◁▬▬▷ Progress Bar	
Data Date	28JAN00	◁▬▬▷ Critical Activity	
Run Date	28JAN00		

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